United States
Environmental Protection
Agency

Prevention, Pesticides
and Toxic Substances
(7508P)

EPA 738-R-07-010
December, 2008

Reregistration Eligibility Decision for Para-dichlorobenzene

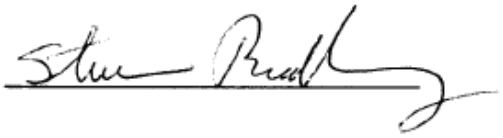
Revised December 2008

Reregistration Eligibility Decision (RED) for Para-dichlorobenzene

List C

Case No. 3058

Revised December 2008

Approved by: 

Steven Bradbury, Ph.D., Director
Special Review and Reregistration Division

Date: 12/09/08

TABLE OF CONTENTS

Glossary of Terms and Abbreviations

ai	Active Ingredient
CFR	Code of Federal Regulations
DCI	Data Call-In
DNT	Developmental Neurotoxicity
EC	Emulsifiable Concentrate Formulation
EPA	Environmental Protection Agency
EUP	End-Use Product
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FFDCA	Federal Food, Drug, and Cosmetic Act
GLN	Guideline Number
HCF	Heath Care Facility
HED	Health Effects Division
HDT	Highest Dose Tested
IRIS	Integrated Risk Information System
LADD	Lifetime Average Daily Dose
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.
LIP	Label Improvement Program
LOC	Level of Concern
LOAEL	Lowest Observed Adverse Effect Level
mg/kg/day	Milligram Per Kilogram Per Day
mg/L	Milligrams Per Liter
MOA	Mode of Action
MOE	Margin of Exposure
MRID	Master Record Identification (number). EPA's system of recording and tracking studies submitted.
MUP	Manufacturing-Use Product
N/A	Not Applicable
NCEA	National Center for Environmental Assessment
NDETF	Non-Dietary Exposure Task Force
NLAA	Not Likely to Adversely Affect
NR	Not Required
NOAEL	No Observed Adverse Effect Level
$NOAEL_{HEC}$	No Observed Adverse Effect Level Human Equivelant Dose.
OPP	EPA Office of Pesticide Programs
OPPTS	EPA Office of Prevention, Pesticides and Toxic Substances
PII	Primary Irritation Index
PK	Pharmacokinetic
ppb	Parts Per Billion
ppm	Parts per Million
RED	Reregistration Eligibility Decision
RfC	Reference Concentration
RfD	Reference Dose
SF	Safety Factor
SLN	Special Local Need (Registrations Under Section 24(c) of FIFRA)
TEAM	Total Exposure Assessment Methodology
TGAI	Technical Grade Active Ingredient
USDA	United States Department of Agriculture
UF	Uncertainty Factor
UF_{db}	Database Uncertainty Factor

PARA-DICHLOROBENZENE TEAM

Office of Pesticide Programs:

Health Effects Risk Assessment
William H. Donovan, Ph.D.
Sayed Tadayon
George Ghali, Ph.D.

Ecological Fate and Effects Risk Assessment
Gary Orrick
Marietta Echeverria

Biological and Economics Analysis Assessment
Rafael Prieto
Steve Jarboe
LaVerne Dobbins

Registration Division
Dan Peacock
John Hebert

Risk Management
Molly Clayton
Kevin Costello

Para-dichlorobenzene Reregistration Eligibility Decision

The Reregistration Eligibility Decision (RED) document for para-dichlorobenzene was signed on September 28, 2007. In accordance with the Agency's public participation process, a public comment period for the RED was conducted. This comment period opened December 12, 2007 and closed February 11, 2008. The comments received primarily concerned the episodic ingestion risk estimates. The Agency, in response, re-evaluated the acute oral endpoint selection and agreed that there were no effects attributable to a single dose, and revised the human health risk assessment and the RED accordingly. The *HED Chapter of the Reregistration Eligibility Decision Document (RED) for Para-dichlorobenzene*; *Revised Version,* dated April 1, 2008, other supporting documents, and comments can be found in the docket at http://www.regulations.gov under docket identification (ID) number EPA-HQ-OPP-2007-0937. The revisions made to para-dichlorobenzene RED are as follows:

- The acute oral endpoint and the risk estimate for episodic ingestion of mothballs were removed from Section III. After careful reconsideration of the applicability of the toxicity endpoint selected for the previous analysis of episodic ingestion of mothballs, the Agency concluded that an acute oral RfD is not necessary for para-dichlorobenzene. For further discussion of acute oral risk, see Section III of this document.

- In Section III, the acute dermal toxicity category was changed from III to IV in Table 1, as this was a typographical error.

- In Section IV, the requirement of special packaging to mitigate risk from episodic ingestion of mothballs was removed.

- In Section V, Table 6 was revised to remove the requirement for special packaging of mothballs, and the "keep out of reach of children" language was modified to be consistent with other chemicals with similar warning statements.

Abstract

The Environmental Protection Agency (EPA or the Agency) has completed the human health and ecological risk reregistration memorandum for the para-dichlorobenzene and is issuing its risk management decision. The human health risk assessment and ecological risk reregistration memorandum, which are summarized below, are based on the review of the required target database supporting the use patterns of currently registered products. As a result of this review, EPA has determined that para-dichlorobenzene-containing products are eligible for reregistration, provided that risk mitigation measures are adopted and labels are amended accordingly. That decision is discussed fully in this document.

Para-dichlorobenzene is a fumigant insecticide. The majority of its pesticidal use is as a moth repellant to protect garments from insect damage and in and around birdcages for the control of lice and ticks. There are no outdoor uses registered for para-dichlorobenzene; therefore, ecological risk was not assessed. Since para-dichlorobenzene does not have any food or other outdoor uses, the only uses assessed are indoor residential uses and a single occupational use. There were no risk estimates of concern.

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 risks 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 or not the pesticide meets the "no unreasonable adverse effects" criterion of FIFRA.

This document summarizes EPA's human health risk assessment, ecological reregistration memorandum, and reregistration eligibility decision (RED) for para-dichlorobenzene. The document consists of six sections. Section I contains the regulatory framework for reregistration; Section II provides an overview of the chemical and a profile of its use and usage; Section III gives an overview of the human health risk assessment and ecological reregistration memorandum; Section IV presents the Agency's decision on reregistration eligibility and risk management; and Section V summarizes the label changes necessary to implement the risk mitigation measures outlined in Section IV. Finally, the Appendices list related information, supporting documents, and studies evaluated for the reregistration decision. The risk assessments for para-dichlorobenzene and all other supporting documents are available in the Office of Pesticide Programs (OPP) public docket (http://www.regulations.gov) under docket number EPA-HQ-OPP-2007-0937.

II. Chemical Overview

A. Regulatory History

The Agency's predecessor for pesticide registrations, the U.S. Department of Agriculture (USDA), first registered a product containing para-dichlorobenzene in 1947. The Agency has never issued a Registration Standard for this product. However, in the early 1990s, the Agency required the technical registrant to supply acute toxicity data on the technical product. In the latter half of the 1990s, the Agency initiated a Label Improvement Program (LIP) to update the precautionary text, use directions, storage, and disposal instructions to reduce exposure to para-dichlorobenzene and other chemicals, especially when used in homes.

Currently, the Agency has 28 products registered; of those, 5 are manufacturing-use products and 23 are end-use products. All are registered under Section 3 of the Federal Insecticide, Fungicide, Rodenticide Act (FIFRA). There are no Special Local Needs (SLNs) registrations. Most products (18) are for moth and carpet beetle control inside of airtight spaces (closets, chests, and garment bags) in homes. Some products (3) are also used indoors to kill lice and mites on birds in cages. One product is used to kill wax moths in empty beehives and bee houses stored indoors. Also, one product is used to repel Norway rats and house mice from indoor storage areas and to repel gray squirrels from attics.

B. Chemical Identification

PARA-DICHLOROBENZENE:

Para-dichlorobenzene is a colorless or white crystalline solid with a strong, pungent odor.

Common Name:	Para-dichlorobenzene
Chemical Name:	1,4-dichlorobenzene
Other Names:	PDCB, P-Dichlorobenzene
Chemical Class:	Fumigant Insecticide
PC Code:	061501
Case Number:	3058
CAS Registry Number:	106-46-7
Molecular Weight:	147
Empirical Formula:	$C_6H_4Cl_2$
Technical Registrants:	PPG Industries, Inc. and Solutia, Inc.

C. Use Profile

The following information on the currently registered uses includes an overview of use sites and application methods. A detailed table of the uses of para-dichlorobenzene eligible for reregistration is contained in Appendix A.

Type of Pesticide: Fumigant Insecticide.

Target Organism: The primary target pests are moths, carpet beetles, lice, and mites.

Use Sites: Para-Dichlorobenzene is limited to indoor use only. It is used as a moth and beetle repellant in products which are applied to commercial and residential use sites such as closets and storage containers, and to repel lice and mites from bird cages. It is also used in empty bee supers (stored indoors), to repel wax moths. When formulated into varpal rope, it is used in attics to repel snakes, mice, rats, squirrels, and bats.

Use Classification: Para-dichlorobenzene products are designated as general use.

Formulation Types: Cakes, crystals, balls, sachetes, impregnated strips, blocks, varpel rope, and flakes.

Application Methods: By hand.

Application Rates: It is applied as a moth repellant in moth balls, flakes, crystals, cakes, and sachetes at rates ranging from 0.01 pounds of active ingredient per cubic foot (lbs ai/ft^3) to 0.02 lbs ai/ft^3. When formulated into a block, it is applied at a maximum application rate of 0.025 lbs ai/ft^3. When formulated into Varpel rope, it is applied at a rate of 50 feet of product per 5,000 ft^3. It is applied to beehives at a maximum application rate of 0.19 lbs ai/hive. When applied in bird cages, the maximum application rate is 0.017 lbs ai/cage.

Application Timing: The application timing is generally not mentioned on existing para-dichlorobenzene labels, although some labels recommend re-application after six months, while others recommend use as needed.

D. Estimated Usage of Pesticide

Approximately 5 million lbs of para-dichlorobenzene are marketed on average per year. The majority of the usage is in moth repellant products. However, detailed usage information is not available.

III. Summary of Para-dichlorobenzene Risk Assessments

The following is a summary of EPA's revised human health risk assessment for para-dichlorobenzene, as presented fully in the *HED Chapter of the Reregistration Eligibility Decision Document (RED) for Para-dichlorobenzene*; *Revised Version,* dated April 1, 2008. Since there are no outdoor uses of para-dichlorobenzene, an ecological risk assessment was not required, as is described in the *Para-dichlorobenzene: EFED Memorandum in Support of the Reregistration Eligibility Decision,* dated September 28, 2007. These documents are available in the OPP Public Docket, docket number EPA-HQ-OPP-2007-0937, and may also be accessed through the Agency's website at https://www.regulations.gov. Hard copies of these documents may be found in the OPP public docket under this same docket number. The purpose of the following summary is to assist the reader by identifying the key features and findings of the paradichlorbenzene human health risk assessment and to help the reader better understand the conclusions reached in the assessment.

EPA's use of human studies in the para-dichlorobenzene risk assessment is in accordance with the Agency's Final Rule promulgated on January 26, 2006, related to Protections for Subjects in Human Research, which is codified in 40 CFR Part 26.

A. Human Health Risk Assessment

The human health risk assessment incorporates potential exposure, hazard, and risks from all sources, which for para-dichlorobenzene are indoor residential uses and a single occupational use. There are no registered food uses for para-dichlorobenzene, and since there are no outdoor uses, drinking water exposure is not anticipated. A dietary risk assessment was not conducted due to the absence of potential drinking water and food exposure. The Agency's human health assessment considers all U.S. populations, including infants and young children. For more information on the para-dichlorobenzene human health risk assessment, see *HED Chapter of the Reregistration Eligibility Decision Document (RED) for Para-dichlorobenzene*; *Revised Version,* dated April 1, 2008.

1. Toxicity of Para-dichlorobenzene

Toxicity assessments are designed to predict whether a pesticide could cause adverse health effects in humans (including short-term or acute effects, such as skin or eye damage, and lifetime or chronic effects, such as cancer, developmental effects, or reproductive effects), and the level or dose at which such effects might occur. The Agency has reviewed all toxicity studies submitted for para-dichlorobenzene and has determined that the toxicological database is reliable and sufficient for reregistration.

a. Acute Toxicity Profile

Para-dichlorobenzene is considered moderately toxic on an acute basis by the oral route (Toxicity Category III). It is considered to be of low toxicity by the inhalation and dermal routes (Toxicity Category IV). It is categorized also as moderately toxic for primary eye irritation (Toxicity Category II) and dermal irritation (Toxicity Category III). Para-dichlorobenzene did not induce delayed contact sensitivity (dermal sensitization) when tested in guinea pigs. The acute toxicity profile for para-dichlorobenzene is summarized in Table 1 below.

Table 1. Acute Toxicity Profile for Para-dichlorobenzene				
Guideline	**Study Type**	**MRID**	**Results**	**Toxicity Category[a]**
870.1100	Acute Oral	40521001	LD_{50} = 3863 mg/kg (males) LD_{50} = 3790 mg/kg (females)	III
870.1200	Acute Dermal	40521001	LD_{50} >6000 mg/kg	IV
870.1300	Acute Inhalation	41410901	LC_{50} = > 6.00 mg/L, highest attainable concentration	IV
870.2400	Primary Eye Irritation	42205301	Conjunctivitis and corneal opacity cleared in 10 days, iritis cleared in 72 hours, vascularization of the cornea cleared in 10 or 13 days. The maximum total irritation scores ranged from 20 to 47 indicating a mild irritant.	II
870.2500	Primary Dermal Irritation	42205302	Moderate to severe erythema persisted for 48-72 hours in most animals. Primary irritation index (PII) = 2.9	III
870.2600	Skin Sensitization	42205303	Negative under the condition of the test.	N/A

a. These technical acute toxicity values included in this document are for informational purposes only. The data supporting these values may or may not meet the current acceptance criteria.

b. Toxicological Endpoints

The toxicological endpoints used in the human health risk assessment for para-dichlorobenzene are listed in Table 2 below. The toxicity of para-dichlorobenzene has been investigated in several animal species by the oral and inhalation routes under chronic and subchronic exposure conditions. Oral studies in rodents and non-rodent species indicate that the liver and kidney are common and primary target organs/tissues. Decreased body weight, reduced organ weights, and changes in hematological parameters are considered some of the common effects for this chemical. The volatility of this material makes the inhalation route the most likely route of human exposure under the current use profile as a moth repellent. Oral exposure is unlikely under the current use profile, and may be limited to episodic ingestion by children. Inhalation exposure was assessed for the following exposure durations: short-term (1-30 days), intermediate-term (1- 6 months), or chronic (> 6 months). Dermal exposures are expected to be short-term in nature; therefore, intermediate-term and chronic dermal endpoints were not selected. Inhalation (short-term, intermediate-term and chronic) and short-term dermal exposures have been assessed.

The available database is considered adequate to characterize any potential for prenatal or postnatal risks for infants and children based on the current use profile for para-dichlorobenzene. The data available on para-dichlorobenzene included two acceptable prenatal inhalation developmental toxicity studies in rats and rabbits and a two-generation inhalation reproduction study in rats. The data provided no indication of increased sensitivity of either fetal animals to (*in utero*) exposure to para-dichlorobenzene or offspring exposed post-natally to para-

dichlorobenzene. Furthermore, the No Observed Adverse Effect Level (NOAEL) of 20 ppm generated in the chronic inhalation toxicity/carcinogenicity study and the NOAEL of 55 ppm generated in the 13-week inhalation toxicity study in rats provided the most sensitive endpoints for all exposure duration scenarios. The regulatory endpoints defined below exceed effect levels seen in the developmental and reproductive toxicity studies in rats and rabbits and, therefore, will be protective of all population subgroups, including infants and children.

Para-dichlorobenzene has low acute toxicity via the oral route of exposure with an acute LD_{50} of 3790 mg/kg body weight (bw). It also has low acute inhalation toxicity (Category IV). An endpoint was chosen for short-term incidental oral exposure. A NOAEL of 25 mg/kg/day generated in the 28-day feeding study in dogs, based on increased liver weight in males and females, increased alkaline phosphatase and irritation of the gastrointestinal tract in females observed at the next higher dose level, LOAEL, of 75 mg/kg/day was selected. There were no effects attributable to a single oral exposure. Since there was no endpoint identified that could be attributable to an acute exposure, there is no acute oral endpoint selected. An acute inhalation neurotoxicity study in rats only showed effects (e.g., decreased forelimb and hind limb grip strength and decreased motor activity) at 600 ppm (approximately 678 mg/kg bw which is near the oral limit dose of 1000 mg/kg bw). The inhalation study would result in direct delivery of the test compound into the blood compared to an oral exposure which involves a first pass effect of the liver prior to delivery to the blood. Furthermore, a 90-day oral (gavage) study in rats found clinical signs (tremors, poor motor response, ocular discharge and hypothermia) and death at a dose of 1200 mg/kg/day, which is higher than a limit dose of 1000 mg/kg bw per day. The only effect seen at the lower doses (600 mg/kg bw per day) was decreases in bw gain, which are not attributable to a single dose. The Agency of Toxic Substances and Disease Registry has not derived an acute oral MRL (minimal risk level) for para-dichlorobenzene, and noted the lack of any clear evidence of hepatic or renal effects in rats or mice treated orally with a single dose of para-dichlorobenzene (up to 2790 mg/kg for rats; up to 1,200 mg/kg for mice). In addition, no apparent toxicity was noted in rats or mice administered $\leq$ 300 mg/kg/day or $\leq$ 600 mg/kg/day, respectively, for 5 days/week for 1 week.

To estimate residential (dermal, incidental oral, and inhalation) and occupational (dermal and inhalation) non-cancer risks, the Agency calculates a margin of exposure (MOE), which is the ratio of the NOAEL selected for risk assessment to the exposure. This MOE is compared to a level of concern which is the same value as the uncertainty factor (UF) applied to a particular toxicity study. For para-dichlorobenzene, the target MOE (i.e., level of concern) dermal exposures is 100. This includes the standard uncertainty factors (UF) of 10X for intraspecies extrapolation and 10X for interspecies variation. For inhalation exposure, a UF of 30 was used to account for both intraspecies extrapolation (10X) and interspecies variations (3X), although traditionally, the uncertainty factor for interspecies extrapolation is 10X. The 10X is often considered to be made up of two components, each equal to a half-log value: 3.16 for pharmacokinetics, which describes how a chemical gets to the target tissue, and 3.16 for pharmacodynamics, which describes how the target tissue responds to the chemical. A full interspecies factor of 10X was not used in this case because the reference concentration (RfC) methodology developed by the Agency was followed in which dosimetry adjustments were used to derive a No Observed Adverse Effect Level Human Equivelant Dose ($NOAEL_{HEC}$), which accounts for the pharmacokinetic component of the interspecies extrapolation, thus allowing a

reduction of the interspecies factor from 10X to 3X.

Table 2. Endpoints Used for Assessing Residential Risks for Para-dichlorobenzene			
Exposure Scenario	**Dose Used in Risk Assessment**	**Level of Concern (LOC) for Risk Assessment**	**Study and Toxicological Effects**
Incidental Oral Short-Term (1-30 days)	NOAEL= 25 mg/kg/day	UF_A= 10x UF_H= 10x Total UF= 100X	4-Week oral toxicity study-dog NOAEL= 25 mg/kg/day LOAEL= 75 mg/kg/day, based on increased liver weight in males and increased alkaline phosphatase and liver weight, irritation to GI tract in females.
Dermal Short-Term (1-30 days)	NOAEL $\geq$ 300 mg/kg/day	UF_A= 10x UF_H= 10x Total UF= 100X	21-day dermal-rat NOAEL $\geq$ 300 mg/kg/day (HDT) LOAEL $\geq$ 300 mg/kg/day.
Inhalation Short-Term (1-30 days)	NOAEL= 150 ppm or $NOAEL_{HEC}$= 180.36 mg/m^3	UF_A= 3x UF_H= 10x Total UF= 30X	28-Day inhalation toxicity - dog Decreased body weight and food consumption, hematological and clinical chemistry changes, increased absolute and relative liver weight, liver histopathological changes, decreased absolute heart weight and absolute and relative adrenal weights seen in both sexes at the next higher dose, LOAEL, of 500 ppm.
Inhalation Intermediate-Term (1-6 months)	NOAEL= 55 ppm $NOAEL_{HEC}$= 58.92 mg/m^3	UF_A= 3x UF_H= 10x Total UF= 30X	13-Week Inhalation toxicity - mouse hematological changes seen at the next higher dose, LOAEL, of 120 ppm.
Inhalation- Chronic exposure (6-12 months)	NOAEL= 20 ppm $NOAEL_{HEC}$= 0.56 ppm or 3.4 mg/m^3	UF_A= 3x UF_H= 10x Total UF= 30X	Toxicity/carcinogenicity– rat Olfactory epithelium changes observed at the next higher dose, NOAEL, of 75 ppm
Cancer (oral, dermal, inhalation)	Not Likely to be Carcinogenic to Humans below doses that do not perturb normal liver homeostasis. Based on the Integrated Risk Information System (IRIS) evaluation draft document of May 2006, the low dose linear extrapolation approach was suggested. "The recommended inhalation risk unit for para-dichlorobenzene is $4x10^{-3}(mg/m^3)^{-1}$, based on hepatocellular tumors in male and female mice."		
NOAEL = no observed adverse effect level. $NOAEL_{HEC}$ = no observed adverse effect level human equivelant dose. UF = uncertainty factor. UF_A = extrapolation from animal to human (intraspecies). UF_H = potential variation in sensitivity among members of the human population (interspecies). N/A = not applicable.			

2. Carcinogenicity of Para-dichlorobenzene

In its meeting of 02/21/2007, the Health Effect Division (HED) Cancer Assessment Review Committee (CARC) determined that para-dichlorobenzene has been tested adequately by the oral and inhalation routes in two acceptable carcinogenicity studies in rats and mice. The

treatment was associated with increased liver tumors in both sexes of mice dosed orally or exposed to para-dichlorobenzene via inhalation, and increased incidences of renal tumors in male, but not female, rats when the chemical was administered orally but not via inhalation. The male rat kidney tumors were judged to have been produced via the nongenotoxic-cytotoxic alpha-2u-globulin pathway, which is considered to be specific to the male rat with no counterpart for human beings and, thus, not relevant for human cancer risk assessment.

In accordance with the EPA's Final Guidelines for Carcinogen Risk Assessment (March 2007), the CARC classified para-dichlorobenzene as "Not Likely to be Carcinogenic to Humans" based on evidence that a non-mutagenic mode of action (MOA) involving mitogenesis was established for para-dichlorobenzene induced liver tumors in mice and that the carcinogenic effects are not likely below a defined dose that does not perturb normal liver homeostasis (e.g., increased liver cell proliferation). Mitogenic chemicals act by promoting the clonal expansion of preneoplastic cells by stimulating cell proliferation. A mitogenic chemical stimulates cell proliferation in the target organ without obvious cytotoxicity or cell death. Another important feature of this MOA is that the mitogenic effect is not persistent over time; instead, it is resolved and then is manifested within proliferative foci, which are considered preneoplastic lesions. Through continuous exposure, it is these preneoplastic lesions that develop into tumors. This liver mode of action is generally associated with an increase in metabolizing enzymes. In the case of para-dichlorobenzene, there is a good dose correlation between liver tumors, hepatic microsomal enzyme induction, and cell proliferation in the absence of overt liver toxicity consistent with mitogenesis. Dose concordant morphologic characteristics, *i.e.*, liver hypertrophy and liver weight increases, were consistent with this mitogenic mouse liver response.

3. Metabolites and Degradates

As this chemical only has indoor uses, no plant, livestock, or water metabolism studies were submitted, nor or are they required. The Agency reviewed the metabolism of para-dichlorobenzene using the only data available (rat), which show the conjugates of 2,5-dichlorophenol in urine after ingestion of para-dichlorobenzene. This does not present a concern, since the primary route of exposure is inhalation, and no metabolites were detected in an inhalation study. Furthermore, the Agency is not aware of any degradate formed at the site of application to which people might be exposed by the potential routes of exposure (ingestion, dermal contact, or inhalation).

4. Dietary Risk (Food + Water)

There are no food uses currently registered for para-dichlorobenzene; therefore, dietary exposure is not of concern. Furthermore, since there are no outdoor uses for para-dichlorobenzene, drinking water exposure is not anticipated. Due to the lack of potential food and drinking water exposure, a dietary assessment for para-dichlorobenzene was not conducted.

5. Residential Non-Cancer Risk

Residential exposure assessments consider all potential non-occupational pesticide exposure. For para-dichlorobenzene, the Agency has evaluated potential exposure and risk to

para-dichlorobenzene for homeowners who handle (apply) products containing para-dichlorobenzene. The Agency also evaluated potential post-application risk to adults and children entering para-dichlorobenzene-treated areas.

To estimate residential (inhalation and dermal) risks, the Agency calculates a margin of exposure (MOE), which is the ratio of the toxicity endpoint (NOAEL or $NOAEL_{HEC}$) selected for risk assessment to the exposure. This MOE is compared to a level of concern (LOC), which is the same value as the uncertainty factor (UF) applied to a particular toxicity study. For para-dichlorobenzene, the uncertainty factor is 100 for dermal exposure and 30 for short-term, intermediate-term, and chronic inhalation exposures. A summary of para-dichlorobenzene residential risk follows. For further information on residential risk, refer to the *HED Chapter of the Reregistration Eligibility Decision Document (RED) for Para-dichlorobenzene*; *Revised Version,* dated April 1, 2008.

a. Residential Handler Non-Cancer Risks

The Agency determined that there is the potential for residential handlers to be exposed to para-dichlorobenzene during application. Of para-dichlorobenzene's registered residential uses, the application of mothballs to sites such as closets and drawers by hand were considered the exposure scenarios with the greatest potential for exposure. The Agency anticipates handler inhalation exposure during the application process; however, appropriate inhalation handler exposure data are not available to assess this scenario, therefore, only dermal exposure was assessed for residential handlers. Exposure data does exist for short-term exposure from post-application inhalation exposure to areas treated with para-dichlorobenzene, and this exposure scenario has been assessed. The Agency assumes that the short-term post-application inhalation assessment is protective for handler inhalation exposure, since measured concentrations of para-dichlorobenzene would likely be greater due to the time allotted in the exposure study for the product to accumulate in the enclosed areas that were treated. Since handler dermal exposure durations are expected to be short-term only, intermediate-term and chronic dermal exposures were not assessed. Since there were no chemical-specific exposure data addressing the use of a hand for indoor mothball applications, the dermal unit exposure values were based on surrogate data from naphthalene, another chemical which is also used in mothballs.

The residential handler dermal MOEs for both scenarios assessed (closets and drawers) were greater than 100 (MOE = 33,000 and 224,000, respectively) and, therefore, are below the Agency's LOC.

b. Residential Post-Application Non-Cancer Risks

The Agency uses the term "post-application" to describe exposures to individuals that occur as a result of being in an environment that has been previously treated with a pesticide. Unlike residential handler exposure, for which the Agency assumed only adults will be handling and applying para-dichlorobenzene products, individuals of varying ages can potentially be exposed when reentering or performing activities in areas that have been previously treated.

Of the registered residential uses of para-dichlorobenzene, the greatest potential for post-application inhalation exposures is anticipated after moth ball applications are made to areas such as closets and dresser drawers. For para-dichlorobenzene, the adult and toddler inhalation exposure estimates are the same, since the endpoints derived from the inhalation toxicity studies (all durations) were adjusted for pharmacokinetic (PK) differences when $NOAEL_{HEC}$s were calculated. Therefore, post-application inhalation risk was assessed for adults only. There is also a potential for post-application exposure to children ingesting mothballs. The Agency does not consider ingestion of mothballs to be a routine behavior, but instead considers this an episodic event. Since no endpoint attributable to an acute oral exposure was identified, episodic ingestion of para-dichlorobenzene was not assessed.

Since no chemical-specific post-application data were submitted in support of para-dichlorobenzene, the Agency used exposure data from a naphthalene study, "Estimation of Homeowner Exposure to LX1298-01 (Naphthalene) Resulting from Simulated Residential Use as an Insect Repellent", for the short-term inhalation assessment. The Agency determined that this study provided the best currently available estimate of exposure levels to para-dichlorobenzene vapors for short-term durations, because it was based on the maximum label use rate for naphthalene, which matches that of para-dichlorobenzene. Therefore, the naphthalene homeowner exposure study was used as a surrogate for estimating para-dichlorobenzene levels for the short-term inhalation exposure scenario. In this study, concentrations were measured over a three day period near the treatment location (closets and drawers) and throughout the house. The average exposure levels corresponding to these locations were 0.85 and 0.66 mg/m^3, respectively. Due to the similar use and retreatment rates for mothballs containing naphthalene and para-dichlorobenzene, the Agency anticipates that the exposure levels of these chemicals when formulated as mothballs are similar. However, para-dichlorobenzene has a higher vapor pressure than naphthalene, and this indicates that the use of naphthalene data as a surrogate for para-dichlorobenzene does not necessarily result in a conservative risk estimate. To address this uncertainty, the Agency will require a confirmatory chamber study to determine levels of para-dichlorobenzene in the air resulting from use of mothballs at the maximum label rate.

For intermediate- and long-term post-application inhalation assessment, the Agency used studies conducted by EPA entitled "Total Exposure Assessment Methodology (TEAM)" to estimate exposure values. Among other things, these studies measured indoor residential concentrations of para-dichlorobenzene. The data indicate a seasonal dependence of the para-dichlorobenzene levels. The Agency used maximum mean concentration of 36.2 ug/m^3 (winter value) to assess intermediate-term scenarios. For long-term assessment, an average of the seasonal value (21 ug/m^3) was used.

Ingestion of moth balls containing para-dichlorobenzene is a potential source of exposure because children can eat them if they are found in treated closets or dressers. If a toddler were to eat a moth ball containing para-dichlorobenzene, the event is most likely to be "episodic", that is, a one-time occurrence that is not likely to be repeated. For para-dichlorobenzene, an acute dietary endpoint was not selected, since an appropriate endpoint could not be attributed to a single oral dose; therefore, no episodic assessment was performed. The residential post-application MOEs for para-dichlorobenzene are summarized in Table 3 below.

Table 3. Para dichlorobenzene Non-Cancer Residential Post-Application Risk		
Source of exposure	**Exposed Population**	**MOE**
Inhalation Short –Term		
Mothballs	Adult (Accessing Treated Areas)	212
	Adult (Inhabiting Treated Home)	273
Inhalation Intermediate –Term		
Mothballs	Adult	1650
Inhalation Long- –Term		
Mothballs	Adult	160

6. Residential Cancer Risk

Generally, when the Agency determines that there is a plausible MOA for a carcinogen, a low dose linear extrapolation for cancer is not conducted. However, the Integrated Risk Information System (IRIS) program is currently reviewing the mode of action evidence for para-dichlorobenzene and has not yet made a determination of non-linearity. IRIS is a database of human health effects that may result from exposure to various substances found in the environment, and it is maintained by EPA's National Center for Environmental Assessment (NCEA). IRIS was initially developed for EPA staff in response to a growing demand for consistent information on chemical substances for use in risk assessments, decision-making and regulatory activities. The information in IRIS is intended for those without extensive training in toxicology, but with some knowledge of health sciences. Since NCEA has not yet made a non-linearity determination, for the purposes of the present assessment, the Agency is presenting a linear low-dose extrapolation risk for cancer.

A draft IRIS document on para-dichlorobenzene was recently circulated for external peer review (Revised Final Draft, May 2006. EPA/635/R-03/015). In this document, NCEA concluded that a cancer risk assessment should be based on a low-dose linear extrapolation model, and the final draft of May 2006 provided two slope factors for hepatic tumors in male and female mice. The first was based on oral exposure (table 5-5, page 136), $1.7x10^{-2}$ $(mg/kg/day)^{-1}$ and $4.0x10^{-3}$ $(mg/kg/day)^{-1}$ for males and females, respectively. The second was based on inhalation exposure (pages 141 and 142), $4.5x10^{-3}$ $(mg/m^3)^{-1}$ and $4.3x10^{-3}$ $(mg/m^3)^{-1}$, for males and females, respectively. NCEA recommended an overall unit risk for both males and females of $4x10^{-3}(mg/m^3)^{-1}$ based on inhalation exposure. This unit risk should not be used with exposures exceeding the point of departure ($23mg/m^3$), because above this level the fitted dose-response model better characterizes what is known about para-dichlorobenzene inhalation carcinogenicity. In addition to the slope factors, the draft IRIS document provided Bench Mark Concentration Doses at which a 10% response for liver tumors was seen in the mice (BMC_{10}) and its 95% lower bound ($BMCL_{10}$) based on inhalation exposures. The (BMC_{10}) and ($BMCL_{10}$) for hepatocellular adenoma or carcinoma in female mice were 41.3 mg/m^3 and 22.9 mg/m^3, respectively.

Cancer risk estimates resulting from exposures to para-dichlorobenzene were calculated for homeowners handling mothballs and individuals living in homes treated with mothballs and

inhaling mothball vapors. A Lifetime Average Daily Dose (LADD) was calculated and then multiplied by a slope factor of $4x10^{-3}(mg/m^3)^{-1}$, which was calculated by NCEA based on dose response data for hepatic tumors in male and female mice exposed to para-dichlorobenzene via inhalation. The estimates of cancer risk are based on the assumption of low dose linearity and range from 7.1×10^{-9} for dermal exposure during the application of mothballs to 6.0×10^{-5} for post-application inhalation exposure to mothballs.

For the estimation of cancer risk for dermal exposures of homeowners handling mothballs, dermal exposures were compared to inhalation endpoints. Cancer risks were assessed for dermal exposures using an inhalation endpoint, since systemic effects (liver tumors) were noted in the inhalation studies for para-dichlorobenzene. The slope factor is based on these systemic effects. If the toxic effects after inhalation exposures were localized (nose only) and not systemic, it would not be appropriate to include a cancer risk for dermal exposures that relied upon a toxic endpoint for localized effects resulting from inhalation exposures.

a. Residential Handler Cancer Risk

For the residential handler cancer risk estimate, a highly conservative assumption that adult individuals are exposed annually for 50 years out of a 70 year lifetime was used. In addition, the cancer risk estimates are conservative because the LADD calculated for dermal exposures do not include a dermal absorption factor; instead, 100% dermal absorption has been assumed.

Estimated cancer risks for dermal exposures of adults handling mothballs during application are below 1×10^{-6} using the linear approach and, therefore, are below the Agency's levels of concern. The cancer risks for dermal exposures of handlers are presented below in Table 4.

Table 4. Para-dichlorobenzene Cancer Risks for Adults During Mothball Application (Dermal Exposures)

Application Method	Exposed Individual	Location	Dermal Average Daily Dose (mg/kg/day)	LADD (mg/kg/day)	Cancer Risk
Hand	Adult	Closet	0.0091	3.55×10^{-5}	4.9×10^{-8}
		Drawer	0.00134	5.20×10^{-6}	7.1×10^{-9}

b. Residential Post-Application Cancer Risk

Estimated para-dichlorobenzene cancer risks for post-application inhalation exposures are presented below in Table 5.

Table 5. Para-dichlorobenzene Post Application Cancer Risk Assessment for Inhalation Exposures

Exposed Individual	Inhalation Average Daily Dose (ug/m^3)	LADD (ug/m^3)	Cancer Risk
Adult	21	15	6.0×10^{-5}

Using linear low dose extrapolation and a slope factor of $4.0x10^{-3}$ $(mg/m^3)^{-1}$, the cancer risk estimates could be as high as 6×10^{-5}. For the residential post-application cancer risk estimate, a highly conservative assumption that homeowners are exposed annually for 50 years out of a 70 year lifetime was used.

The linear low dose extrapolation model provides a range of cancer risks. As with all linear low dose extrapolation models, the range is bracketed by an upper bound and a lower bound on these risks. The 6×10^{-5} cancer risk estimate represents an upper bound on cancer risk for exposures to para-dichlorobenzene, but the cancer risk could be as low as zero. This is independent of the strengths and weaknesses of the cancer data. OPP believes that the carcinogenic risks are below the upper bound and may be closer to zero for para-dichlorobenzene for several reasons. In addition to the inherent uncertainty in the linear low dose extrapolation model estimates discussed above, as described in Section 2: Carcinogenicity of Para-dichlorobenzene, available evidence indicates that the mechanism leading to tumor formation in the livers of mice after exposure to para-dichlorobenzene is based on sustained mitogenic stimulation and proliferation of hepatocytes. This information forms the basis of a plausible mode of action for tumorigenesis in the mice livers. In addition, the $BMCL_{10}$ (the lower limit of the benchmark concentration central estimate for a 10% response above background. Note: a 10% response is at the limit of sensitivity in most cancer bioassays) for hepatocellular adenoma or carcinoma formation in female mice is 22.9 mg/m^3. If the $BMCL_{10}$ is compared to the measured concentrations of para-dichlorobenzene in people's homes (0.021 mg/ m^3), the $BMCL_{10}$ is 1000 times higher than actual exposures. That is, there is a 1000-fold margin of safety between the concentration at which there is a 10% tumor response in test animals, at the lowest measurable incidence, and actual measured exposure in people's homes. Consequently, OPP believes the carcinogenic risk from this use is not of concern for the following reasons: 1) there is mechanistic data to support a lower cancer risk estimate based on a mitogenic mode of carcinogenic action, 2) conservatisms in the exposure estimates, and 3) a large margin of safety between estimated human exposure and the point at which there is a measurable (10%) tumor response.

7. Aggregate Risk

Since para-dichlorobenzene does not have outdoor uses registered, which could result in drinking water exposure, or any food uses, which could result in dietary exposure, a dietary risk assessment was not conducted. Similarly, because dietary risk is not expected, an aggregate assessment combining residential, food, and drinking water exposure was not conducted. The Agency did not aggregate adult dermal exposures while handling para-dichlorobenzene products with inhalation post-application exposures, because there were no dermal effects noted at the highest dose tested (HDT).

8. Occupational Risk

The only occupational use of para-dichlorobenzene arises from use in empty beehives. Exposure from this activity is expected to be no higher than the handler (dermal) and post-application (inhalation) exposures from the indoor residential use of mothballs which were assessed. Risk estimates for residential handler and post-application exposures are protective of

this occupational use and below levels of concern. As a result, a separate risk assessment for occupational exposures (handler and post-application) was not conducted for para-dichlorobenzene.

9. Human Incident Data

In evaluating incidents to humans, the Agency reviewed reports from the National Poison Control Centers (PCC), the Agency's Office of Pesticide Program's Incident Data System (IDS), the California Pesticide Illness Surveillance Program, National Pesticide Information Center, and the National Institute for Occupational Safety and Health's (NIOSH) Sentinel Event Notification System for Occupational Risk (SENSOR) program.

The summary findings for the period 1993 to 2005 for para-dichlorobenzene, primarily from PCC data are:

- The proportion of symptomatic cases among those exposed in all population groups evaluated (occupation, non-occupational, children) were not significantly different from the overall, national composite average. Specifically, the proportion of symptoms among those followed and the proportion hospitalizations among those seen at a health care facility (HCF) is lower than the composite of all chemicals.
- Among children under the age of six, there were 3165 exposure cases to para-dichlorobenzene while the entire population (all ages) of exposure cases to para-dichlorobenzene has 4480; children represent the largest portion of the total exposed in the population (70.6%).
- There was an average of about 344 exposures per year, 33 symptomatic cases per year, and 38 cases per year seen in a heath care facility (HCF) across all population groups.
- An irregular decreasing annual trend is evident in the 12 year-span of data collected; the number of total exposed cases was reduced by half in this period.

B. Environmental Risk Assessment

Since there are no outdoor uses of para-dichlorobenzene, and indoor uses of para-dichlorobenzene are not expected to result in ecological exposure, an ecological risk assessment was not completed, as is described in the *Para-dichlorobenzene: EFED Memorandum in Support of the Reregistration Eligibility Decision,* dated May 8, 2007. This determination is confirmed in the *Para-dichlorobenzene: Addendum to EFED's Memorandum in Support of the Reregistration Eligibility Decision,* dated September 28, 2007, which states that para-dichlorobenzene is used for control of wax moths in empty beehives (EPA Reg. No. 61617-2), but is not an outdoor use. Label directions instruct users to apply at a maximum rate of 0.19 lbs a.i. for hives in storage. Users are instructed to air out hives before reuse, because residual para-dichlorobenzene would harm bees in a hive. In addition, para-dichlorobenzene must not be present in populated hives, because the odor of para-dichlorobenzene could be absorbed by the honey, and para-dichlorobenzene has no food tolerances.

IV. Risk Management, Reregistration, and Tolerance Reassessment Decision

A. Determination of 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 or not 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 para-dichlorobenzene as active ingredients. The Agency has completed its review of these generic data, and has determined that the data are sufficient to support reregistration of all products containing para-dichlorobenzene.

The Agency has completed its assessment of the human health and ecological risks associated with the use of pesticide products containing para-dichlorobenzene. The Agency has determined that para-dichlorobenzene-containing products are eligible for reregistration provided that label amendments are made as outlined in Chapter V. Appendix A summarizes the uses of para-dichlorobenzene that are eligible for reregistration. Appendix B identifies the generic data requirements that the Agency reviewed as part of its determination of reregistration eligibility of para-dichlorobenzene, and lists the submitted studies that the Agency found acceptable.

Based on its evaluation of para-dichlorobenzene, the Agency has determined that products containing para-dichlorobenzene, unless labeled and used as specified in this document, would present risks inconsistent with FIFRA. Accordingly, should a registrant fail to implement any of the risk mitigation measures identified in this document, the Agency will take regulatory action to address the risk concerns from the use of para-dichlorobenzene. If all changes outlined in this document are incorporated into the product labels, then all current risks for para-dichlorobenzene will be adequately mitigated for the purposes of this determination under FIFRA.

B. Public Comment Period

Because the risks associated with the use of para-dichlorobenzene were considered to be low, the Agency determined an expedited one phase RED process was appropriate for para-dichlorobenzene, and a 60-day public comment period was conducted with the publication of the para-dichlorobenzene RED in December, 2007. The comments received primarily concerned the episodic ingestion risk estimates. The Agency, in response, revisited the acute oral endpoint selection and agreed that there were no effects attributable to a single dose, and revised the human health risk assessment and the RED accordingly. The original and revised risk assessments and REDs are available to the public through EPA's electronic public docket and comment system, Regulations.gov, under docket identification (ID) number EPA-HQ-OPP-2007-0937. In addition, the para-dichlorobenzene RED document may be downloaded or viewed through the Agency's website at http://www.epa.gov/pesticides/reregistration/status.htm.

C. Regulatory Position

1. Regulatory Rationale

The Agency has determined that products containing para-dichlorobenzene are eligible for reregistration provided that specified label amendments are made. The following is a summary of the rationale for managing risks associated with the use of para-dichlorobenzene. Where labelling revisions are warranted, specific language is set forth in the summary table of Section V.

Residential Non-Cancer Risk

For non-cancer residential risk, the MOEs for all handler scenarios assessed were greater than 100 (i.e. were below the Agency's LOC), and therefore, no mitigation measures are required.

Residential post-application non-cancer risk (inhalation) was also assessed. The MOEs for all durations of post-application inhalation exposure were greater than 30, *i.e.,* the Agency's LOC, and therefore, no mitigation measures are required.

Residential Cancer Risk

Cancer risk estimates resulting from exposures to para-dichlorobenzene were calculated for homeowners handling mothballs (dermal), and individuals living in homes treated with mothballs and inhaling mothball vapors using a linear low dose extrapolation model.

Estimated cancer risks for dermal exposures of adults handling mothballs during application are below 1×10^{-6} using the linear approach and, therefore, are below the Agency's level of concern.

For the residential post-application inhalation risk estimate, OPP determined that carcinogenic risk is also not of concern. See Section III of this document for a discussion of residential post-application cancer risk.

Occupational Risk

The only occupational use of para-dichlorobenzene arises from use in empty beehives. Exposure from this activity is expected to be no higher than the handler (dermal) and post-application (inhalation) exposures from the indoor residential use of mothballs which were assessed. Risk estimates for residential handler and post-application exposures are protective of this occupational use and below levels of concern. As a result, a separate risk assessment for occupational exposures (handler and post-application) was not conducted for para-dichlorobenzene.

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, 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. When the appropriate screening and/or testing protocols being considered under the Agency's Endocrine Disrupter Screening Program (EDSP) have been developed and vetted, para-dichlorobenzene may be subjected to additional screening and/or testing to better characterize effects related to endocrine disruption.

3. Endangered Species

The Endangered Species Act required federal agencies to ensure that their actions are not likely to jeopardize listed species or adversely modify designated critical habitat. The Agency has developed the Endangered Species Protection Program to identify pesticides whose use may cause adverse impacts on federally listed endangered and threatened species, and to implement mitigation measures that address these impacts. A determination that there is a likelihood of potential effects to a listed species may result in limitations on the use of the pesticide, other measures to mitigate any potential effects, and/or consultations with the Fish and Wildlife Service or National Marine Fisheries Service, as necessary.

The Agency has reviewed the registrations and other information for para-dichlorobenzene and concludes that this insecticide does not pose a risk of direct acute or chronic effects to any species listed under the Endangered Species Act, since the registered uses for para-dichlorobenzene will not result in outdoor exposure to endangered species.

D. Labeling Requirements

In order to be eligible for reregistration, various use and safety information will be included in the labeling of all end-use products containing para-dichlorobenzene. For the specific labeling statements, refer to Section V of this RED document.

V. What Registrants Need to Do

The Agency has determined that products containing para-dichlorobenzene are eligible for reregistration provided that the required label amendments are made. The Agency intends to issue Data Call-In Notices (DCIs) requiring product-specific data. Generally, registrants will have 90 days from receipt of a DCI to complete and submit response forms or request time extension and/or waiver requests with a full written justification. For product-specific data, the registrant will have eight months to submit data. Below are the label amendments that the Agency intends to require for para-dichlorobenzene to be eligible for reregistration.

A. Manufacturing Use Products

1. Additional Generic Data Requirements

The generic data base supporting the reregistration of para-dichlorobenzene for currently registered uses has been reviewed and determined to be substantially complete. However, the Agency is requiring a confirmatory chamber study (875.2500) to determine levels of para-dichlorobenzene in the air resulting from use of mothballs at the maximum label rate. It is recommended that a study protocol be submitted to the Agency for review prior to the inception of the study.

2. Labeling for Manufacturing-Use Products

To ensure compliance with FIFRA, manufacturing-use product (MUP) labeling should be revised to comply with all current EPA regulations, PR Notices, and applicable policies. The MUP labeling should bear the labeling contained in Table 6.

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. The Registrant 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. The Agency intends to issue a separate product-specific data call-in (PDCI), outlining specific data requirements. For any questions regarding the PDCI, please contact Veronica Dutch at 703-308-8585.

2. Labeling for End-Use Products

To be eligible for reregistration, labeling changes are necessary to implement measures outlined in Section IV above. Specific language to incorporate these changes is specified in Table 6. Generally, conditions for the distribution and sale of products bearing old

labels/labeling will be established when the label changes are approved. However, specific 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.

C. Labeling Changes Summary Table

For para-dichlorobenzene to be eligible for reregistration, all para-dichlorobenzene labels must be amended to incorporate the risk mitigation measures outlined in Section IV. Table 6 describes how language on the labels should be amended.

Table 6. Summary of Labeling Changes for Para-dichlorobenzene		
Description	**Amended Labeling Language**	**Placement on Label**
Manufacturing Use Products		
For all Manufacturing Use Products	"Only for formulation into an ***insecticide/repellent*** for the following use(s) [fill blank only with those uses that are being supported by MP registrant]."	Directions for use
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	"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)." "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)."	Directions for Use
Environmental Hazards Statements	"ENVIRONMENTAL HAZARDS" "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 Eliminations System (NPDES) 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 State Water Board or Regional Office of the Environmental Protection Agency."	Precautionary Statements: Environmental Hazards

Table 6. Summary of Labeling Changes for Para-dichlorobenzene		
Description	**Amended Labeling Language**	**Placement on Label**
End-Use Products Intended for Occupational Use		
PPE Requirements Established by the RED For All Formulations	"Personal Protective Equipment (PPE)" "All applicators and other handlers must wear: - Long sleeved shirt, - Long pants, - Shoes plus socks."	Immediately following/below Precautionary Statements: Hazards to Humans and Domestic Animals
User Safety Requirements	"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." "Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them."	Precautionary Statements: Hazards to Humans and Domestic Animals immediately following the PPE requirements
User Safety Recommendations	"User Safety Recommendations" "Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. 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."	Precautionary Statements under: Hazards to Humans and Domestic Animals (Must be placed in a box.)
Availability Statements	"IMPORTANT: Keep out of reach of children." "Do not place in areas accessible to children."	Directions for Use

Table 6. Summary of Labeling Changes for Para-dichlorobenzene		
Description	**Amended Labeling Language**	**Placement on Label**
End-Use Products Intended for Residential Use		
Availability Statements	"IMPORTANT: Keep out of reach of children." "Do not place in areas accessible to children."	Directions for Use

Appendix A. Use Patterns Eligible for Reregistration for Para-dichlorobenzene					
Use Site	**Formulation Type**	**Product Type**	**Maximum Application Rate/Application[2]**	**Unit**	**Maximum Retreatment Interval**
Beehives- Empty	Crystalline	N/S[1]	0.1875	lb/hive	NS
Birds	Crystalline	N/S	0.0313	lb/cage	NS
Household/Domestic Dwellings Contents	Crystalline	Balls, Flakes, Crystals, Cakes, and Sachets	0.02	lb/ft^3	7
Household/Domestic Dwellings Contents	Crystalline	Block	0.0249	lb/ft^3	7
Household/Domestic Dwellings Indoor Nonfood Handling Areas	Impregnated Material	Varpel Rope	9.86	ft/1000 ft^3	NS
Human Clothing	Crystalline	Balls, Flakes, Crystals, Cakes, and Sachets	0.02	lb/ft^3	7

1. Not specified.
2. Para-dichlorobenzene has neither reentry interval restrictions nor restrictions on the maximum number of application per year.

Appendix B

GUIDE TO APPENDIX B

Appendix B contains listings of data requirements which support the reregistration for active ingredients within the case 3058 covered by this Reregistration Eligibility Decision Document. It contains generic data requirements that apply to 3058 in all products, including data requirements for which a "typical formulation" is the test substance.

The data table is organized in the following format:

1. Data Requirement (Column 1). The data requirements are listed in the order in which they appear in 40 CFR Part 158. The reference numbers accompanying each test refer to the test protocols set in the Pesticide Assessment Guidelines, which are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 (703) 487-4650.

2. Use Pattern (Column 2). This column indicates the use patterns for which the data requirements apply. The following letter designations are used for the given use patterns:

A	Terrestrial food
B	Terrestrial feed
C	Terrestrial non-food
D	Aquatic food
E	Aquatic non-food outdoor
F	Aquatic non-food industrial
G	Aquatic non-food residential
H	Greenhouse food
I	Greenhouse non-food
J	Forestry
K	Residential
L	Indoor food
M	Indoor non-food
N	Indoor medical
O	Indoor residential

3. Bibliographic citation (Column 3). If the Agency has acceptable data in its files, this column lists the identifying number of each study. This normally is the Master Record Identification (MRID) number, but may be a "GS" number if no MRID number has been assigned. Refer to the Bibliography appendix for a complete citation of the study.

Appendix B Data Supporting Guideline Requirements for the Reregistration of Para-dichlorobenzene			
REQUIREMENT		**Use Pattern**	**CITATION(S)**
PRODUCT CHEMISTRY			
New Guideline Number	**Study Description**		
830.1600	Description of Materials Used to Produce the Product	M	46460601
830.1620	Description of Production Process	M	46285301; 46460601
830.1670	Formation of Impurities	M	46285301; 46460601
830.1700	Preliminary Analysis	M	46285301
830.1800	Analytical Method	M	46285301
830.6302	Color	M	46285301
830.6303	Physical State	M	46285301
830.6304	Odor	M	46285301
830.6315	Flammability	M	46285301
830.6317	Storage Stability	M	46285301
830.6320	Corrosion Characteristics	M	46285301
830.7000	pH	M	46285301
830.7050	UV/Visible Absorption	M	Data Gap
830.7200	Melting Point	M	46285301
830.7220	Boiling Point/Boiling Range	M	46285301
830.7300	Density	M	46285301
830.7840	Water Solubility	M	46285301
830.7950	Vapor Pressure	M	46285301
TOXICOLOGY			
870.1100	Acute Oral Toxicity – Rat	M	40521001
870.1200	Acute Dermal Toxicity – Rabbit	M	40521001
870.1300	Acute Inhalation – Rat	M	41410901
870.2400	Acute Eye Irritation – Rabbit	M	42205301
870.2500	Acute Dermal Irritation - Rabbit	M	42205302
870.2600	Skin Sensitization – Guinea Pig	M	42205303
870.3150	90-Day Oral Toxicity- Dog	M	43988801
870.3200	21-Day Dermal Toxicity – Rat	M	41315001
870.3465	90-Day Inhalation Toxicity – Dog	M	41822801
870.3700	Prenatal Developmental Toxicity	M	42619601 (Rat); 40568001 (Rabbit)
870.3800	Reproduction and Fertility Effects – Rat	M	41108801

830.4100	Chronic Toxicity – Dog	M	43988802
870.4300	Combined Chronic Feeding/ Carcinogenicity	M	40521005 (Rat); 40521005 (Mouse)
870.5100	Bacterial Reverse Mutation	M	40521004; 40568002; 40568003
870.5275	Sex-linked Recessive Lethal Test in *Drosophila Melanogaster*	M	40521007
870.5300	Cytogenetics- Mouse Lymphoma Mutagenic Assay	M	40521007; 40521013; 40521014
870.5375	Cytogenetics – Sister Chromatid Exchange In CHO cells.	M	43368448; 43868210; 40521007
870.5395	In Vitro Mammalian Cytogenetics Tests	M	43368447; 40521012
870.5450	Rodent Dominant Lethal Assay	M	40521011
870.5550	Unscheduled DNA Synthesis in Mammalian Cells in Culture	M	40521008
870.5900	In Vitro Sister Chromatid Exchange Assay	M	40521007
870.6200	Acute Neurotoxicity Screening Battery	M	43350601
870.6200	Subchronic Neurotoxicity Screening Battery – Rat	M	43350602
870.7485	General Metabolism	M	41697801
OCCUPATIONAL/RESIDENTIAL EXPOSURE			
875.2400	Dermal Exposure	M	43716501
875.2500	Inhalation Exposure	M	Data Gap

Appendix C. Technical Support Documents

Additional documentation in support of this RED is maintained in the OPP docket, located in Room S-4400, One Potomac Yard (South Building), 1777 S. Crystal Drive, Arlington, VA. It is open Monday through Friday, excluding legal holidays, from 8:30 am to 4 pm.

The risk assessments and other supporting documents for para-dichlorobenzene are available in the Public Docket, under docket number EPA-HQ-OPP-2007-0937, and on the Agency's web page, http://www.regulations.gov. The docket contains risk assessments and related documents as of December, 2007.

Technical support documents for the Para-dichlorobenzene RED include the following:

Health Effects Documents

1. *Para-dichlorobenzene: Occupational and Residential Exposure Assessment and Recommendations for the Reregistration Eligibility Decision (RED),* dated September 28, 2007.
2. *HED Chapter of the Reregistration Eligibility Decision Document (RED) for Para-dichlorobenzene*; *Revised Version,* dated April 1, 2008.
3. *Review of Paradichlorobenzene Incident Reports*, dated June 25, 2007.

Ecological Fate and Effects Documents

1. *Para-dichlorobenzene: EFED Memorandum in Support of the Reregistration Eligibility Decision,* dated May 8, 2007.
2. *Para-dichlorobenzene: Addendum to EFED's Memorandum in Support of the Reregistration Eligibility Decision,* dated September 28, 2007.

Appendix D. Citations Considered to be Part of the Database Supporting the Reregistration 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.

MRID#	Citation Reference
1071	Gilbert, E.L.R. (1957) Entomological Laboratory Test Report (on) Paradichlorobenzene and Diethyl Toluamide: Misc. No. 1695. (Unpublished study received Sep 16, 1957 under unknown admin. no.; submitted by Asco Electronics Co., Andover, Mass.; CDL:228307-A)
1671	Nadeau, H.G.; Oaks, D., Jr. (1961) Separation and analysis of chlorobenzenes in mixtures by gas chromatography. Analytical Chemistry 33(9):1157-1159. (Also~In~unpublished submission received Jan 26, 1969 under 9F0754; submitted by Olin Mathieson Chemical Corp., New York, N.Y.; CDL:091301-K)
4377	Childers, N.F. (19??) Bush berry culture: Chapter XXII. Pages 759- 780, 799-806, ~In~Modern Fruit Science. New Brunswick, N.J.: Rutgers Univ. (Also~In~unpublished submission received Nov 4, 1976 under 7E1882; submitted by Interregional Research Project No. 4, New Brunswick, N.J.; CDL:097579-A)
4899	Haberman, W.O.; Payne, J.R. (1962) Miscellaneous Insecticides: S.R. Project #25. (Unpublished study received Jun 19, 1962 under 602-104; submitted by Ralston Purina Co., St. Louis, Mo.; CDL: 231617-A)
4904	Uni-Research (1973) Evaluation of Dog Repellent Product: Technical Report. (Unpublished study received Dec 12, 1973 under 1663-11; submitted by Grant

	Laboratories Div., Oakland, Calif.; CDL: 022675-A)
4909	Harmad Laboratories (1976) Use of Naphthalene as a General Insect- icide. (Unpublished study received Nov 16, 1976 under 1548-3; submitted by Vermex Co., Calabasas, Calif.; CDL:227450-C)
6007	Storer, T.I.; Jameson, E.W., Jr. (1965) Control of Field Rodents on California Farms. Davis: Univ. of California. (Agricultural Experiment Station, Extension Service circular 535; also~In~un- published submission received Apr 23, 1976 under 6704-78; sub- mitted by U.S. Dept. of Interior, Fish and Wildlife Service, Washington, D.C.; CDL:224030-I)
13189	Cooper, P.A. (1973) The Movement of Chloropicrin Vapor in Wood to Control Decay. Master's thesis, Oregon State Univ., Dept. of Forest Products. (Unpublished study received Apr 23, 1974 under 5316-17; submitted by Namco Chemicals, Inc., San Jose, Calif.; CDL:024054-C)
32762	Kissileff, A. (1941) Research Data. (Unpublished study received Aug 16, 1965 under 59-18; submitted by Burroughs Wellcome Co., Research Triangle Park, N.C.; CDL:000121-A)
32780	Miller, W.V. (1957) Kil-A-Mite: Further Improvements. (Unpublished study received Sep 22, 1969 under 59-105; submitted by Burroughs Wellcome Co., Research Triangle Park, N.J.; CDL:000127-A)
33162	Caton, J.R.; Colby, T.; Hunter, J.H. (1964) ?Efficacy of Scram in Repelling Dogs, Bats and Chipmunks|. (Unpublished study re- ceived Dec 28, 1964 under 239-2057; submitted by Chevron Chemi- cal Co., Richmond, Calif.; CDL:001454-A)
34170	Ives, M.; Watson, D.L.; Caton, J.R. (1964) Report to California Chemical Company: Effectiveness Test on Scram Dog Repellent. (Unpublished study received Jul 14, 1964 under 239-2057; pre- pared in cooperation with Industrial Bio-Test Laboratories, Inc., submitted by Chevron Chemical Co., Richmond, Calif.; CDL:001449-A)
34171	Ives, M. (1964) Report to California Chemical Company: Additional Effectiveness Test on Dog Repellent Scram. (Unpublished study received Jul 17, 1964 under 239-2057; prepared by Industrial Bio-Test Laboratories, Inc., submitted by Chevron Chemical Co., Richmond, Calif.; CDL:001450-A)
34172	Nelson, C.R.; Watson, D.L. (1964) ?Efficacy of Dog Repellent Scram on Garbage Cans and Shrubs|: Project No. 170-W64-1. (Unpub- lished study received Oct 8, 1964 under 239-2057; submitted by Chevron Chemical Co., Richmond, Calif.; CDL:001451-A)
34173	Hensill, G.S. (1964) Testing Efficacy--Ortho Scram Dog Repellent Bomb. (Unpublished study received Nov 4, 1964 under 239-2057; submitted by Chevron Chemical Co., Richmond, Calif.; CDL: 001452-A)
34174	Davis, D.L.; Watson, D.L. (1964) Scram Bomb--Dog Repellency. (Un- published study including project no. 170-W64-1, received Dec 9, 1964 under 239-2057; submitted by Chevron Chemical Co., Rich- mond, Calif.; CDL:001453-A)

36182	Allied Chemical Corporation (1968) Chlorobenzenes. Morristown, N.J.: Allied Chemical. (Data sheet DS-PCH; also~In~unpublished submission received Jun 12, 1972 under 218-422; CDL:001090-A)
44105	Hollingsworth, R.L.; Rowe, V.K.; Oyen, F.; et al. (1956) Toxicity of Paradichlorobenzene: Determinations on experimental animals and human subjects. American Medical Association Archives of Industrial Health 14(?/Aug):138-147. (Also~In~unpublished sub- mission received Oct 22, 1971 under 6718-7; submitted by Amway Corp., Ada, Mich.; CDL:103485-A)
51053	Grant Laboratories (1964) ?Data on Grant's Dog Repellent|. (Com- pilation; unpublished study received Jun 5, 1964 under 1663-11; CDL:220938-A)
51533	Fulton, R.A. (1954) Letter sent to Fred Lodes dated May 17, 1954 ?Particle size determination on cans of Fuller Brush Co. Moth- proofer|. (Unpublished study received on unknown date under 1574-9; submitted by Stanley Home Products, Inc., Westfield, Mass.; CDL:224117-A)
51534	Loening, K.L. (1973) Letter sent to William S. Broughton dated Jul 3, 1973 ?Chemical names for compounds|. (Unpublished study in- cluding letter dated Jun 26, 1973 from W.S. Broughton to Kurt Loening, received Jan 16, 1976 under 5086-11; prepared by Ameri- can Chemical Society, submitted by Roussel Corp., New York, N.Y.; CDL:224135-B)
53189	Alcor Products (1972) Data Relating to Safety of Repel Animal Repellent. (Unpublished study received Jun 24, 1974 under 20215- 1; CDL:051047-A)
57823	Bottimer, L.J. (1929) Notes on Paradichlorobenzene and Naphthalene as repellents against clothes moth larvae. Journal of Economic Entomology 22(Jun):570-573. (Also~In~unpublished submission re- ceived May 25, 1977 under 38510-1; submitted by Specialty Organ- ics, Inc., Irwindale, Calif.; CDL:230291-A)
58520	Henderson, C. (19??) Acute Toxicity of Pesticides to Fish and Mammals: Report No. 23247. (U.S. Fish and Wildlife Service; unpublished study; CDL:093228-AB)
60828	Grant Laboratories (1964) ?Efficacy of Grant's Dog Repellent|. (Reports by various sources; unpublished study received May 21, 1964 under 1663-11; CDL:220937-A)
64153	Grant Laboratories (1964) ?Efficacy Studies on Dog Repellent|. (Compilation; unpublished study received Jun 25, 1964 under 1663-11; CDL:220938-A)
64425	Muench-Kreuzer Candle Company, Incorporated (1955) Bug-Go-Lites. (Compilation; unpublished study received on unknown date under unknown admin. no.; CDL:227880-A)
64876	Monsanto Company (1972) Material Safety Data Sheet: ?Santochlor|. (For U.S. Dept. of Labor; unpublished study; CDL:229764-D)
68516	Hudson Associates, Incorporated (1962) ?Poultri-gard to the Rescue Freeing Fowl from Mites and Lice|. (Compilation; unpublished study received Jun 15, 1962 under 5985-2; CDL:231136-A)
70820	Michaelson, J.B. (1975) Oral Toxicity (LDI50^ Determination): Labo- ratory No. 10655. (Unpublished study received Jul 30, 1975 un- der 20215-1; prepared by

	Applied Biological Sciences Laboratory, submitted by Alcor Products, Carlsbad, Calif.; CDL:221979-A)
70821	Michaelson, J.B. (1975) Acute Dermal Toxicity: Laboratory # 10655. (Unpublished study received Jul 30, 1975 under 20215-1; prepared by Applied Biological Sciences Laboratory, submitted by Alcor Products, Carlsbad, Calif.; CDL:221979-B)
70822	Michaelson, J.B. (1975) Draize Eye Test: Laboratory No. 10655. (Unpublished study received Jul 30, 1975 under 20215-1; prepared by Applied Biological Sciences Laboratory, Inc., submitted by Alcor Products, Carlsbad, Calif.; CDL:221979-C)
70823	Michaelson, J.B. (1975) Primary Skin Irritation: Laboratory No. 10655. (Unpublished study received Jul 30, 1975 under 20215-1; prepared by Applied Biological Sciences Laboratory, Inc., submitted by Alcor Products, Carlsbad, Calif.; CDL: 221979-D)
73787	Whitmire Research Laboratories, Incorporated (1964) ?Effectiveness of Outdoor Dog Away|. (Compilation; unpublished study received Jun 11, 1964 under 499-138; CDL:020041-A)
75183	Stor Aid of Canada, Limited (1956) ?Efficacy of PDB Garment Bags|. (Compilation; unpublished study received on unknown date under 4528-1; CDL:231194-A)
78503	U.S. National Clearinghouse for Poison Control Centers (1965) Para-dichlorobenzene. (Unpublished study received May 6, 1977 under unknown admin. no.; submitted by Willert Home Products, St. Louis, Mo.; CDL:229764-A)
79975	U.S. National Clearinghouse for Poison Control Centers (1977) Dale Lemon Scented Room Deodorant--Lemon Tree. (Unpublished study received May 6, 1977 under unknown admin. no.; submitted by Willert Home Products, St. Louis, Mo.; CDL:229764-B)
93918	Margard, W.L. (1978) In vitro Bioassay of Selected Compounds. (Unpublished study received Jan 25, 1982 under 748-161; prepared by Battelle Columbus Laboratories, submitted by PPG Industries, Inc., Barberton, Ohio; CDL:246648-D)
117777	Azouz, W.; Parke, D.; Williams, R. (1955) The metabolism of halo- genobenzenes: Ortho- and para-dichloropbenzenes. Biochemical Journal 59:410-415. (Also In unpublished submission received Jun 10, 1970 under 0F0931; submitted by Hooker Industrial Chem- icals, Niagara Falls, NY; CDL:091586-K)
121659	Palazzolo, R. (1964) Report to Nalco Chemical Company: Toxicity of Nalcon 240 to Fresh Water Fish. (Unpublished study received Jun 11, 1964 under 1706-48; prepared by Industrial Bio-Test Labora- tories, Inc., submitted by Nalco Chemical Co., Oak Brook, IL; CDL:006536-A)
121660	Amway Corp. (1968) ?Physiologic Response to Paradichlorobenzene|. (Unpublished study received Oct 15, 1971 under 6718-7; CDL: 103486-A)
121661	Amway Corp. (1974) Product Control Procedures for Moth Crystals. (Compilation; unpublished study received Dec 9, 1974 under 6718-7; CDL:110589-A)
134310	Rosner, L. (1959) To Determine the Effectiveness of Fyte 60 ... in Reducing the Bacteria Content of Urine in Urinals and in Reduc- ing the Bacteria Content of the Atmosphere: Laboratory 943573. (Unpublished study received Nov 13, 1967 under

	8550- 20; prepared by Rosner-Hixson Laboratories, submitted by Pro- Specialities, Inc., Wauwatosa, WI; CDL:240691-A)
134515	US EPA (1978) Administrative Record of the Pre-RPAR Review for Dichlorobenzes.
138945	Interregional Research Project No. 4 (1967) (Efficacy: Methyl Bromide). (Compilation; unpublished study received 1973 under 3E1387; CDL:112373-B)
140015	Weck, F.J. (1974) Letter sent to Don Freeman dated Mar 28, 1974 ?Data on Repel|. (Unpublished study received Jun 24, 1974 under 20215-1; prepared by Friedrich J. Weck Co., submitted by Alcor Products, Carlsbad, Calif.; CDL:051047-E)
140757	Whitmire Research Laboratories, Inc. (1962) ?Efficacy: House Trainer|. (Compilation; unpublished study received Dec 17, 1962; Dec 26, 1962; Feb 7, 1963 under 499-135; CDL:006067-A)
141838	Chacon Chemical Corp. (19??) [Product Chemistry and Toxicity Data for Paradichlorobenzene and Orthodichlorobenzene]. Unpublished compilation. 16 p.
152838	Valle-Herrera, V. (1984?) [Efficacy Data]: Repel #3 Rat and Mouse Repellent. Unpublished compilation prepared by Colegio de Inge- nieros Quimicos de Jalisco, A. C. 5 p.
152839	Alcor Products Corp. (1985) Alcor's Rat and Mouse Repellent: Chem- istry: [Product Chemistry Data]. Unpublished compilation. 13 p.
153914	Alcor Products Inc. (1984) Repel for Rats and Mice: [Product Chem- istry Data]. Unpublished study. 17 p.
155724	Alcor Products Corporation (1985) Repel Rat and Mouse Repellent... Chemistry Addendum. Unpublished compilation. 12 p.
5001782	Johnson, H.R.; McIntire, M.S. (1975) Pesticide poisoning in children: a review from Children's Memorial Hospital, Omaha, Nebraska from 1960-1973_ Part I. Nebraska Medical Journal 60(2):40-43.
40465100	BSP Marketing, Inc. (1987) Submission of Data To Support the Regis- tration of Red Circle Pure Para Moth Balls: Product Chemistry Data. Transmittal of 1 study.
40465101	Dimiceli, S. (1987) Product Chemistry Data: Red Circle Moth Balls. Unpublished compilation prepared by BSP Marketing, Inc. 8 p.
40521000	Chlorobenzene Producers Assoc. (1988) Submission of Data in Respon- se to the Comprehensive Data Call-in Notice for Data on Para- dichlorobenzene. Transmittal of 14 studies.
40521001	Gaines, T.; Linder, R. (1986) Acute toxicity of pesticides in adult and weanling rats. Fundamental and Applied Toxicology 7:299- 308.
40521002	Hodge, M.; Palmer, S.; Bennett, I.; et al. (1977) Para-dichloro- benzene: Teratogenicity Study in Rats: Rept. No. CTL/P/340. Unpublished study prepared by Imperial Chemical Industries, Ltd. 58 p.
40521003	Giavini, E.; Broccia, M.; Prati, M.; et al. (1986) Teratologic Evaluation of p-dichlorobenzene in the rat. Bull. Environ. Contam. Toxicol. 37:164-168.

40521004	Flowers, L.; Kier, L. (1978) Para-dichlorobenzene: Final Report on Salmonella Mutagenicity Assay of p-Dichlorobenzene (Technical). Proj. No. LF-78-145. Unpublished study prepared by Monsanto Co. 18 p.
40521005	National Toxicology Program (1987) Toxicology and Carcinogenesis Studies of 1,4-Dichlorobenzene in F344/N Rats and B6C3F1 Mice. NTP TR 319. US Dept. of Health and Human Services: US Govern- ment Printing Office. 198 p.
40521006	Conner, T.; Theiss, J.; Hanna, H.; et al. (1985) Genotoxicity of organic chemicals frequently found in the air of mobile homes. Toxicology Letters 25:33-40.
40521007	Chlorobenzene Producers Assoc. (1984) Summary Report: The Effect of Para-dichlorobenzene in a Battery of Genetic Toxicology Assays. Unpublished compilation prepared in cooperation with Bioassay Systems Corp. and Unov. of Wisconsin. 110 p.
40521008	Steinmetz, K.; Spanggord, R. (1987) Examination of the Potential of p-Dichlorobenzene to Induce Unscheduled DNA Sunthesis or DNA Replication in the in vivo - in vitro Mouse Hepatocyte DNA Re- pair Assay (Task I): Proj. No. LSC-2603-1. Unpublished study prepared by SRI International. 35 p.
40521009	Steinmetz, K.; Spanggord, R. (1987) Evaluation of the Potential of p-Dichlorobenzene to Induce Unscheduled DNA Synthesis on DNA Replication in the in vivo - in vitro Rat Kidney DNA Repair As- say: Proj. No. LSC-2603. Unpublished study prepared by SRI In- ternational. 33 p.
40521010	Anderson, D.; Richardson, C. (1976) Para-dichlorobenzene: Cytogene- tic Study in the Rat: Rept. No. CTL/P/293. Unpublished study prepared by Imperial Chemical Industries, Ltd. 21 p.
40521011	Anderson, D.; Hodge, M. (1976) Para-dichlorobenzene: Dominant Leth- al Study in the Mouse: Rept. No. CTL/P/296. Unpublished study prepared by Imperial Chemical Industries, LTD. 58 p.
40521012	Herbold, B. (1986) Investigation of p-Dichlorobenzene, 1,4-Dichlo- robenzene for clastogenic Effects in Mice Using the Micronucleus Test: Study No. T. 1021071. Unpublished study prepared by Bayer AG, Institute of Toxicology. 23 p.
40521013	Boer, W.; Hoorn, A. (1986) Mutagenicity Evaluation of p-Dichloro- benzene in the CHO HGPRT Forward Mutation Assay: Rept. No. R 3691. Unpublished study prepared by Litton Bionetics. 25 p.
40521014	Boer, W.; Hoorn, A. (1986) Evaluation of p-Dichlorobenzene in the in vitro Transformation of BALB/3T3 Cells Assay: Rept. No. R 3710. Unpublished study prepared by Litton Bionetics. 19 p.
40521100	Y-Tex Corp. (1988) Submission of Efficacy, Chemistry and Toxicity Data in Support of Inert Ingredient. Transmittal of 3 studies.
40521101	Kellerby, J. (1988) ?Inert Ingredient|: Volume 1 ...: Description of Potential Use in Registered Products. Unpublished study pre- pared by Y-Tex Corp. 5 p.
40521102	Kellerby, J. (1988) ?Inert Ingredient|: Volume 2 ...: Product Chem- istry. Unpublished study prepared by Y-Tex Corp. in cooperation with Ciba-Geigy Corp.

	41 p.
40521103	Schwemmer, B. (1982) ?Inert Ingredient|: Volume 3 ...: Summaries of Acute, Subchronic, Chronic and Mutagenicity Studies with Animals and a Human Skin Irritation Study. Unpublished study prepared by Ciba-Geigy Corp. 9 p.
40521200	Y-Tex Corp. (1988) Submission of Chemistry and Toxicity Data in Support of Inert Ingredient. Transmittal of 3 studies.
40521201	Kellerby, J. (1988) ?Inert Ingredient|: Volume 1: Residue Chemistry ... Description of Potential Use in Registered Products. Unpub- lished study prepared by Y-Tex Corp. 5 p.
40521202	Kellerby, J. (1988) ?Inert Ingredient|: Volume 2: Product Chemis- try. Unpublished study prepared by Y-Tex Corp. in cooperation with Ciba-Geigy Corp. 52 p.
40521203	Schwemmer, B. (1982) ?Inert Ingredient|: Volume 3: Toxicology Data ...: Summaries of Acute, Subchronic, Chronic and Mutagenicity Studies with Animals and Skin Irritation Studies with Humans. Unpublished study prepared by Ciba-Geigy Corp. 12 p.
40548600	Standard Chlorine of Delaware, Inc. (1988) Submission of Data in Response to Data Call-In Notice for Paradichlorobenzene: Product Chemistry Data. Transmittal of 2 studies.
40548601	Touhey, R. (1988) Paradichlorobenzene--Product Identity. Unpub- lished compilation prepared by Standard Chlorine Chemical Co. 18 p.
40548602	George, J. (1988) Analysis of Paradichlorobenzene by Gas Chromato- graphy: Project No. 01188-M/25JG2. Unpublished study prepared by Standard Chlorine of Delaware, Inc. 20 p.
40568000	Monsanto Co. (1988) Submission of Toxicology and Exposure Data in Response to Comprehensive Data Call-in Notice for Data on Para- dichlorobenzene. Transmittal of 12 studies.
40568001	Hayes, W.; Gushow, T.; John, J. (1982) Para-dichlorobenzene--Inha- lation Teratology Study in Rabbits: File No. K-1323-(12). Un- published study prepared by Dow Chemical U.S.A. 350 p.
40568002	Haworth, S.; Lawlor, T.; Zeiger, E.; et al. (1983) Salmonella muta- genicity test results for 250 chemicals. Environmental Muta- genesis Supplement 1:3-142.
40568003	Shimizu, M.; Yasui, Y.; Matsumoto, N. (1983) Structural specificity of aromatic compounds with special reference to mutagenic acti- vity in salmonella typhimurium--a series of chloro- or fluoro- nitorbenzene derivatives. Mutation Research 116:217-236.
40568004	Birch, M. (1975) Para-dichlorobenzene--Toxicological Investigation of Acute Dermal Toxicity in New Zealand Albino Rabbits: Labora- tory Project ID: Y-75-300. Unpublished study prepared by Younger Laboratories, Inc. 5 p.
40568005	Dill, G.; Peters, A. (1979) Para Dichlorobenzene--Subchronic Toxi- city Study: ... Mice: Subcontract No. 76-34-106002. Unpublished study prepared by Battelle's

	Columbus Laboratories. 27 p.
40568006	Peters, A. (1980) Para Dichlorobenzene--Subchronic Toxicity Study: ... Mice: Subcontract No. 76-34-106002. Unpublished study pre- pared by Battelle's Columbus Laboratories. 54 p.
40568007	Dill, G.; Peters, A. (1979) Para Dichlorobenzene--Subchronic Toxi- city Study: ... Fischer 344 Rats: Subcontract No. 76-34-106002. Unpublished study prepared by Battelle's Columbus Laboratories. 59 p.
40568008	Riley, R.; Chart, I.; Doss, A.; et al. (1980) Para-dichlorobenzene: ...: Long Term Inhalation Study in the Rat: CTL Report No. CTL/P/447. Unpublished study prepared by Imperial Chemical In- dustries Ltd. 169 p.
40568009	Charbonneau, M.; Strasser, J.; Lock, E.; et al. (1987) Para-dichlo- robenzene--1,4-Dichlorobenzene-Induced Nephrotoxicity: Similar- ity with Unleaded Gasoline (UG)-Induced Renal Effects. Unpub- lished study prepared by Chemical Industry Institute of Toxico- logy. 7 p.
40568010	Wallace, L. (1986) The Total Exposure Assessment Methodology (TEAM) Study: Direct Measurement of Personal Exposures through Air and Water for 600 Residents of Several U.S. Cities. Unpublished compilaiton prepared by Research Triangle Institute. 43 p.
40568011	Nelms, H.; Mason, A. (1987) Para-dichlorobenzene--Determination of Emission Rates and Concentration Levels of p-Dichlorobenzene from Moth Repellent: Laboratory Project ID: 87-83.6. Unpublish- ed compilation prepared by Acurex Corp. 114 p.
40568012	Tyl, R. (1988?) Para-dichlorobenzene--Two-generation Reproduction Study of Inhaled Paradichlorobenzene in Sprague-Dawley (CD) Rats: Laboratory Project ID: 86-81-90605. Unpublished compila- tion prepared by Bushy Run Research Center. 49 p.
40621500	The Chas. H. Lilly Co. (1988) Submission of Product Chemistry Data to Support the Registration of Lilly/Miller Dog and Cat Repellent. Transmittal of 1 study.
40621501	Klettke, M. (1988) Lilly/Miller Dog and Cat Repellent: Product Chemistry Data. Unpublished study prepared by The Chas. H. Lilly Co. 36 p.
40621700	Standard Chlorine Chemical Co., Inc. (1988) Submission of Product Chemistry Data in Response to the Paradichlorobenzene Data Call- in. Transmittal of 1 study.
40621701	George, J. (1988) Physical and Chemical Characteristics of Para- dichlorobenzene: Project No. 4188-PDCB/37JG2: 4198-PDCB/39JG2. Unpublished study prepared by Standard Chlorine of Delaware,
40632000	Standard Chlorine of Delaware, Inc. (1988) Submission of Chemistry Data in Support of Paradichlorobenzene. Transmittal of 1 study.
40652300	Monsanto Chemical Co. (1988) Submission of Data in Response to Data Call-in for Product Chemistry Data Relating to Potential Forma- tion of Halogenated Dibenzo-p-dioxin or Dibenzofuran. Transmit- tal of 1 study.

40652301	Kinney, S.; Reask, R. (1987) Product Chemistry Studies: Santochlor. Unpublished study prepared by Monsanto Chemical Co. 8 p.
40788300	Monsanto Chemical Co. (1988) Submission of Chemistry Data in Sup- port of Data Call-in Notice on Paradichlorobenzene. Transmittal of 1 study.
40788301	Downes, J.; Gloeckner, J.; Kinney, S.; et al. (1988) Volume I: Product Chemistry Studies: ... Santochlor Molten: ... Santochlor Blocks: ... Santochlor Crushed: Laboratory Project ID: ARD 072988. Unpublished compilation prepared by Monsanto Chemical Co. 43 p.
40811600	PPG Industries, Inc. (1988) Submissio of Product Chemistry Data to Support the Registration of Para-Dichlorobenzene. Transmittal of 1 study.
40811601	Lee, R. (1987) Para-Dichlorobenzene--Product Chemistry: Laboratory Project No. NP-2-237. Unpublished study prepared by PPG Industries, Inc. 30 p.
40825500	Monsanto Chemical Co. (1988) Submission of Comprehensive Data in Response Data Call-In Notice for Paradichlorobenzene: Product Chemistry Data. Transmittal of 1 study.
40825501	McEntire, R. (1988) Product Chemistry Studies: Paradichlorobenze: Project ID: 3,970,850. Unpublished study prepared by Monsanto Chemical Co. 3 p.
40891800	Chlorobenzene Producers Association (1988) Submission of Chemistry Data in Response to the p-Dichlorobenzene Data Call-In Notice. Transmittal of 1 study.
40891801	Carpenter, M. (1988) "Determination of Octanol-water Partition Coe- ffecient of ?Carbon 14|-p-Dichlorobenzene: ABC Final Report No. 37401. Unpublished study prepared by ABC Laboratories, Inc. 88 p.
41108800	Chlorobenzene Producers Association (1989) Submission of Toxicolog- ical Data in Response to the Comprehensive Data Call-in Notice for Data on Para-dichlorobenzene. Transmittal of 1 study.
41108801	Tyl, R.; Neeper-Bradley, T. (1989) Paradichlorobenzene--Two Genera- tion Reproduction Study of Inhaled Paradichlorobenzene in Sprague-Dawley (CD) Rats: Laboratory Project ID 86-81-90605. Unpublished study prepared by Union Carbide Bushy Run Research Center. 757 p.
41120800	US EPA (19??) Submission of Data To Support Registration of Para dichlorobenzene: Product Chemistry and Toxicology Studies. Transmittal of 7 studies.
41120801	US EPA (1974?) Ortho-and para-dichlorobenzene: Chemical and physical data. IARC 7():231-243.
41120802	Campbell, D.; Davidson, R. (1970) Toxic haemolytic anaemia in preg- nancy due to a pica for paradichlorobenzene. Journal of Obste- trics and Gynaccology of the British Commonwealth 77():657-659.
41120803	Hallowell, M. (1959) Acute haemolytic anaemia following the inges- tion of para-dichlorobenzene. Archives of Disease in Childhood 34(): 74-75.

41120804	Frank, S.; Cohen, H. (1961) Fixed drug eruption due to paradichloro benzene. New York State Journal of Medicine 61(Part 4):4079.
41120805	Broodie, B.; Reid, W.; Cho, A.; et al. (1971) Possible mechanism of liver necrosis caused by aromatic organic compounds. P. 160-164 in Proceedings of the National Academy of Sciences.
41120806	Nalbandian, R.; Pearce, J. (1965) Allergic purpura induced by expo- sure to p-dichlorobenzene. JAMA 194(7):238-239.
41120807	Cotter, L. (1953) Paradichlorobenzene poisoning from insecticides. New York State Journal of Medicine 53(Pt. 11):1690-1692.
41157300	Monsanto Chemical Co. (1989) Submission of Product Chemistry Data in Response to Paradichlorobenzene Comprehensive Data Call-in. Transmittal of 1 study.
41157301	Gloekner, J. (1989) Product Storage Stability: Santochlor Molten, Santochlor Blocks, Santochlor Crushed: Laboratory Project ID: 5/31/89. Unpublished study prepared by Monsanto Chemical Co. 4 p.
41197900	Excell Products Corp. (1989) Submission of Chemistry Data in Sup- port of Excell Moth-Tek Sheets Registration. Transmittal of 1 study.
41197901	Excell Products Corp. (1989) New Product Registration Submission: Excell Moth Tech Sheets: ?Product Chemistry Data|. Unpublished study. 3 p.
41198000	Excell Products Corp. (1989) Submission of Chemistry Data in Support of Excell Moth-Tek Packets Registration. Transmittal of 1 study.
41198001	Excell Products Corp. (1989) New Product Registration Submission: Excell Moth-Tech Packets: ?Product Chemistry Data|. Unpublished study. 3 p.
41198100	Excell Products Corp. (1989) Submission of Chemistry Data in Sup- port of Excell Moth-Tek Hangers Registration. Transmittal of 1 study.
41198101	Excell Products Corp. (1989) New Product Registration Submission: Excell Tech-Moth Hangers: ?Product Chemistry Data|. Unpublished study. 3 p.
41203400	Chlorobenzene Producers Association (1989) Submission of Toxicity Data in Response to Para-Dichlorobenzene Data Call-in. Trans- mittal of 2 studies.
41203401	Ward, G.; Rabe, B. (1989) Para-dichlorobenzene: Acute Toxicity to Daphnia magna under Flow-through Conditions: Laboratory Project ID: 390-3003-000-0200-3140: C-ECBI.5/PDCB. Unpublished study prepared by Hunter/ESE. 33 p.
41203402	Grimes, J.; Jaber, M. (1989) Para-dichlorobenzene: An Acute Oral Toxicity Study with the Bobwhite: Laboratory Project No. 264- 101. Unpublished study prepared by Wildlife International Ltd. 19 p.
41293100	Standard Chlorine Chemical Co., Inc. (1989) Submission of data in support of data call-in for Paradichlorobenzene: Storage stability. Transmittal of 1 study.
41293101	George, J. (1989) Storage Stability: Paradichlorobenzene: Lab Project Number 2229-PDCB/43JG2. Unpublished study prepared by Standard Chlorine of Delaware, Inc. 7 p.

41315000	Chlorobenzene Producers Association (1989) Submission of data in support of comprehensive data call-in for Para-dichlorobenzene: Dermal toxicity. Transmittal of 1 study.
41315001	Auletta, C. (1989) A 21-day Dermal Toxicity Study in Rats with Para-dichlorobenzene: Final Report: Lab Project No. 88-3384; 89953; Method No. BD-004-89. Unpublished study prepared by Bio/dynamics, Inc. 250 p.
41410900	Clorobenzene Producers Association (1990) Submission of Study in Response to Comprehensive Data Call-In Notice for Data on Para- Dichlorobenzene: Toxicology Study. Transmittal of 1 study.
41410901	Newton, P. (1990) An Acute Inhalation Toxicity Study of para- Dichlorobenzene in the Rat: Lab Project Number: 89-8230. Unpub- lished study prepared by Bio/dynamics, Inc. 67 p.
41461100	DowElanco (1990) Submission of Data To Support Registration of Various Hydrocarbons: Residue Chemistry and Toxicology Studies. Transmittal of 18 studies.
41461107	Charbonneau, M.; Strasser, J.; Lock, E.; et al. (1989) Involvement of reversible binds to alpha 2u-globulin in 1,4-dichlorobenzene- induced nephrotoxicity. Toxicology and Applied Pharmacology 99: 122-132.
41561200	Bottomland Naturals, Inc. (1990) Submission of Data To Support the Application for Varmint Repellent Rope (Varpel) Registra- tion: Efficacy Study. Transmittal of 1 study.
41561201	Wilhide, J.; Fletcher, M.; McDaniel, V. (1989) Effectiveness of Varpel (Varmit Repellent Rope) on Wild Rats (Rattus Norvegicus) and Mice (Mus Musculus) in Laboratory and Field Conditions: Lab Project Number: FW 11-89. Unpublished study prepared by Arkansas State Univ., Dept. of Biological Sciences. 14 p.
41576100	Chlorobenzene Producers Association (1990) Submission of Aquatic Toxicity Data in Support of Para-Chlorobenzene Comprehensive Data Call-in. Transmittal of 1 study.
41576101	Scott Ward, G.; Rabe, B. (1989) Para-Dichlorobenzene: Acute Toxi- city to Daphnia magna under Flow-through Conditions: Lab Project Number: 390-3003-000-0200-3140. Unpublished study prepared by Hunter/ESE. 37 p.
41598300	Quails, Inc. (1990) Submission of Supplemental Chemistry Data in Support of Maximum Strength Pediculicide: Amendment - Revised Labeling. Transmittal of 1 study.
41598301	Pipkin, G. (1990) BioSentry Lice Killing Shampoo: Addendum to Pro- duct Chemistry (...). Unpublished study prepared by BioSentry Laboratories. 4 p.
41697800	Monsanto Co. (1990) Submission of Toxicity Data in Response to the 1,4-Dichlorobenzene Data Call-In. Transmittal of 1 study.
41697801	Wilson, A. ; Hall, L. ; Dudek, B. et al. (1990) Pharmacokinetic Study of 1,4-Dichlorobenzene (p-DCB) in the F344 Rat and B6C3F1 Mouse Following Inhalation and Oral Administration: Lab Project Number: EHL 88083. Unpublished study prepared by Monsanto Co. 325 p.

41822800	Chemical Manufactures Association (1991) Submission of Data in Response to Comprehensive Data Call-in for Paradichlorobenzene: Toxicology Study. Transmittal of 1 study.
41822801	Newton, P. (1991) A Four Week Inhalation Toxicity Study of Para- dichlorobenzene in the Dog: Final Report: Lab Project Number: 88-8148: CB-18.0-DOG/INH-BIO/D. Unpublished study prepared by Bio/dynamics, Inc. 202 p.
41903300	Monsanto Co. (1991) Submission of Data in Response to Comprehensive Data Call-in Notice for ParaChlorobenzene: Product Chemistry Study. Transmittal of 1 study.
41903301	Trehy, M. (1991) (1,4-Dichlorobenzene)--Vapor of Para-Dichloro- benzene: Lab Project Number: MSL-10952: ES-91-SS-03: EPS-NO# MO-91-9616. Unpublished study prepared by Monsanto Co. 9 p.
42085400	Standard Chlorine Chemical Co., Inc. (1991) Submission of Data to Support the Pesticide Registration of Paradichlorobenzene: Product Chemistry Data. Transmittal of 1 Study.
42085401	Jacob, G. (1991) Paradichlorobenzene: Certification of Ingredient Limits: Lab Project Number: 09200-PDCB/1BRS1. Unpublished study prepared by Standard Chlorine of Delaware, Inc. 16 p.
42205300	Chlorobenzene Producers Association (1992) Submission of toxicity data in support of reregistration of Para-Dichlorobenzene. Transmittal of 3 studies.
42205301	Morris, T. (1992) Primary Eye Irritation Study in Rabbits: Para-Dichlorobenzene: Lab Project Number: 91-8305-21 (B). Unpublished study prepared by Hill Top Biolabs, Inc. 16 p.
42205302	Morris, T. (1992) Primary Skin Irritation Study in Rabbits: Para-Dichlorobenzene: Lab Project Number: 91-8305-21 (A). Unpublished study prepared by Hill Top Biolabs, Inc. 15 p.
42205303	Morris, T. (1992) Delayed Contact Hypersensitivity in Guinea Pigs (Buehler Technique): Para-Dichlorobenzene: Lab Project Number: 91-8305-21 (C). Unpublished study prepared by Hill Top Biolabs, Inc. 24 p.
42208000	Standard Chlorine of Delaware, Inc. (1992) Submission of product chemistry data in support of registration of Paradichlorobenz- ene. Transmittal of 1 study.
42208001	George, J. (1991) Paradichlorobenzene: Corrosion Characteris- tics: Lab Project Number: 09091-PDCB/5JG. Unpublished study prepared by Standard Chlorine of Delaware, Inc. 16 p.
42319200	Daniel R. Freeman (1992) Submission of product chemistry in support of the registration of Good-Bye Deer. Transmittal of 1 study.
42319201	Freeman, D.; Furdyna, P.; Poche, R. (1992) Physical and Chemical Properties of Good-Bye Deer: ?Product Chemistry|: Lab Project Number: 4-10-92: 92-001. Unpublished study prepared by Alcor Products and Genesis Laboratories. 27 p.
42370500	Willert Home Products (1992) Submission of Data To Support Application for Registration of 1424 Lavender Scented Moth Sachettes: Product Chemistry Study.

	Transmittal of 1 study.
42370501	Krecioch, R. (1992) 1424 Old Fashioned Lavender Scented Moth Sachettes: Product Chemistry: Lab Project Number: 920501-2. Unpublished study prepared by Willert Home Products. 8 p.
42382000	Willert Home Products (1992) Submission o product chemistry data to support the registration of Enoz Para Mothballs (paradichloro- benzene). Transmittal of 1 study.
42382001	Krecioch, R. (1992) 506P Enoz Para Moth Balls Cedar Scented: Lab Project Number: 920501-1. Unpublished study prepared by Willert Home Products. 8 p.
42455200	Bottom Naturals Inc. (1992) Submittal of efficacy data in support of Varpel Rope registration. Transmittal of 2 studies.
42455201	Fletcher, D. (1992) The Effectiveness of Varpel Rope Versus Plain Rope Material in Field Application: Lab Project Number: FT-201. Unpublished study prepared by Bottomland Naturals Inc. 8 p.
42455202	Wilhide, J.; Fletcher, M. (1992) The Effectiveness of Vapel Rope Versus Plain Rope Material in Laboratory Applications. Unpublished study prepared by Arkansas State University, Dept. of Biology. 8 p.
42497400	Mil-Du-Gas Co. (1992) Submission of product performance data to support Formula #2 registration. Transmittal of 1 study.
42497401	Graham, C. (1992) Formula #2--Mold and/or Mildew Evaluation: Lab Project Number: 1856987. Unpublished study prepared by Lancaster Labs, Inc. 19 p.
42574900	Chlorobenzene Producers Association (1992) Submission of toxicity data in support of FIFRA 6(a)(2) requirements for Para-Dichlorobenzene. Transmittal of 1 study.
42574901	Stone, R. (1992) Letter sent to U.S. EPA dated Dec. 3. 1992: report concerning information from an ongoing teratogenicity toxicological study with Para-Dichlorobenzene. Prepared by Chlorobenzene Producers Association. 3 p.
42581100	Chlorobenzene Producers Assoc. (1992) Submission of toxicity data under FIFRA 6(a)(2) requirements for Para-dichlorobenzene. Transmittal of 1 study.
42581101	Stone, R. (1992) Letter sent to US EPA dated Dec. 3, 1992: Preliminary results from an ongoing teratogenicity study with Para-dichlorobenzene in rats. Prepared by Chlorobenzene Produ- cers' Association. 3 p.
42619600	CPA (1993) Submission of toxicity data under FIFRA 6(A)2 to support PDCB reregistration. Transmittal of 1 study.
42619601	Neeper-Bradley, T.; Kubena, F. (1992) Developmental Toxicity Study of Maternally Inhaled Paradichlorobenzene Vapor in CD Rats: Lab Project Number: 91N0110. Unpublished study prepared by Union Carbide Chemicals and Plastics Co., Inc. 381 p.
42685100	Standard Chlorine of Delaware, Inc. (1993) Submission of Preliminary Analysis of Product and Analytical Method Data in Support of Paradichlorobenzene data call-in. Transmittal of 2 Studies.

42685101	George, J. (1989) Paradichlorobenzene: Preliminary Analysis: Lab Project Number: 3099-PCB/JG2. Unpublished study prepared by Standard Chlorine of Delaware, Inc. 15 p.
42685102	George, J. (1988) Paradichlorobenzene: Analytical Method: Lab Project Number: 4208-PDCB/JG2. Unpublished study prepared by Standard Chlorine of Delawere, Inc. 15 p.
42691600	Chlorobenzene Producers Assn. (1993) Supplemental submission of metabolism data in support of the Phase 4 data call-in for p-Dichlorobenzene. Transmittal of 1 study.
42691601	Opatick, R. (1993) Request to Upgrade and Reclassify as Core Minimum a Pharmacokinetic Study with Para-Dichlorobenzene (MRID 41697801) Submitted Pursuant to the Requirement for a General Metabolism Study. Unpublished study prepared by Chlorobenzene Producers Association. 8 p.
43100200	Star Brite Distributing, Inc. (1993) Submission of efficacy data in support of registration of formula #2. Transmittal of 1 study.
43100201	Graham, R. (1992) Formula #2: Mold and/or Mildew Evaluation: (Efficacy Data) Lab Project Number: 1856987. Unpublished study prepared by Lancaster Lab., Inc. 19 p.
43350600	Chlorobenzene Producers Association (1994) Submission of toxicology data in response to DCI for para-dichlorobenzene reregistration. Transmittal of 2 studies.
43350601	Li, A.; Thake, D.; Kaempfe, T. (1994) Acute Neurotoxicity Study of Para-dichlorobenzene in Sprague-Dawley Rats: Lab Project Number: 93097: EHL/93097: MSL/13617. Unpublished study prepared by Monsanto Environmental Health Lab. 303 p.
43350602	Branch, D.; Li, A.; Thake, D.; et al. (1994) Subchronic Neurotoxicity Study of Para-dichlorobenzene in Sprague-Dawley Rats: Lab Project Number: 93098: EHL/93098: MSL/13604. Unpublished study prepared by Monsanto Environmental Health Lab. 360 p.
43400200	Monsanto Co. (1994) Submission of Preliminary Toxicology Data in Support of FIFRA 6(a)(2) for Paradichlorobenzene. Transmittal of 1 Study.
43400201	Downes, J. (1994) Letter sent to Ruth Douglas dated October 4, 1994 concerning results from a chronic toxicity study in the dog with paradichlorobenzene. Prepared by Monsanto Chemical Group. 26 p.
43988800	Monsanto Co. and Others (1996) Submission of Toxicology Data in Support of FIFRA 6(a)(2) for p-Dichlorobenzene. Transmittal of 2 Studies.
43988801	Harrington, R.; Thake, D. (1995) Four Week Range-Finding Study of Para-Dichlorobenzene Administered by Capsule to Beagle Dogs: Lab Project Number: ML-94-090: EHL 94058: 13915. Unpublished study prepared by Monsanto Co. 173 p.
43988802	Naylor, M.; Stout, L. (1996) One Year Study of p-Dichlorobenzene Administered Orally via Capsule to Beagle Dogs: Lab Project Number: ML-94-210: EHL 94093: 148-062. Unpublished study prepared by Ceregen, Unit of Monsanto Co. and Experimental Pathology Labs, Inc. 471 p.

44069000	Bottomland Naturals, Inc. (1996) Submission of Efficacy Data in Support of Label Amendment for Varpel Rope. Transmittal of 1 Study.
44069001	Fletcher, M. (1996) Efficacy of Varpel Rope...Against Squirrels (Sciurus carolinensis) in Attics: Lab Project Number: FT-401: FT-401-03. Unpublished study prepared by Regulatory Affairs Consultants, Inc. and Arkansas State University. 205 p.
44234800	Paragon Household Products, Inc. (1997) Submission of Product Chemistry Data in Support of the Application for Registration of Cedar Scented Para Moth Balls. Transmittal of 2 Studies.
44234801	McCreary, R. (1997) Product Identity and Composition of Cedar Scented Para Moth Balls. Unpublished study prepared by Paragon Household Products, Inc. 27 p.
44234802	McCreary, R. (1997) Physical and Chemical Characteristics of Cedar Scented Para Moth Balls: (Final Report): Lab Project Number: 001. Unpublished study prepared by New Jersey Labs, Inc. 13 p.
44492600	Chlorobenzene Producers Association (1998) Submission of Risk and Exposure Data in Support of the FIFRA 6(a)2 Requirement for p-Dichlorobenzene. Transmittal of 1 Study.
44492601	Japanese Ministry of Health and Welfare. (1997) p-Dichlorobenzene (DCB) Risk Assessment: Lab Project Number: 1997.8. Unpublished study. 31 p.
44683800	Eight in One Products, Inc. (1998) Submission of Toxicity Data in Support of the Registration of 8 in 1 Bird Protector. Transmittal of 1 Study.
44683801	Gilman, M. (1998) Primary Eye Irritation (in Rabbits): 8 in 1 Bird Protector: Lab Project Number: 814664. Unpublished study prepared by Celsis Laboratory Group. 16 p.
44754600	Bottomland Naturals, Incorporated (1999) Submission of Efficay Data in Support of the Registration of Varpel Rope. Transmittal of 1 Study.
44754601	Rutledge, J. (1999) Efficacy of Varpel Rope in Repelling Snakes (various species) from Enclosed Areas: Lab Project Number: FT-501-01: 1213082. Unpublished study prepared by Regulatory Affairs Consultants, Inc. 49 p.
45275100	Bottomland Naturals, Inc. (2000) Submission of Efficacy Data in Support of the Registration of Varpel RopeTM. Transmittal of 1 Study.
45275101	Fletcher, D. (2000) Efficacy of Varpel Rope Against Squirrels (Sciurus carolinensis) in Attics: Supplemental Information for M.R.I.D. # 44754601. Unpublished study prepared by Bottomland Naturals, Inc. 90 p.
46285300	IMS Trading, LLC. (2004) Submission of Product Chemistry Data in Support of the Applications for Registration of IMS Paradichlorobenzene, IMS Moth Balls, IMS Moth Block, IMS Moth Cake and IMS Moth Crystals. Transmittal of 2 Studies.
46285301	Dolan, S. (2004) Groups A & B - Product Chemistry: Paradichlorobenzene. Project Number: 983/001/02. Unpublished study prepared by The Acta Group, LLC. 30 p.

46285302	Dolan, S. (2004) Groups A & B - Product Chemistry for IMS Moth Balls, IMS Moth Block, IMS Moth Cake, and IMS Moth Crystals. Project Number: 983/001/07. Unpublished study prepared by The Acta Group, LLC. 10 p.
46460600	IMS Trading, L.L.C. (2005) Submission of Product Chemistry Data in Support of the Applications for Registration of IMS Paradichlorobenzene, IMS Moth Balls, IMS Moth Block, IMS Moth Cake and IMS Moth Crystals. Transmittal of 1 Study.
46460601	Dolan, S. (2005) Group A -- Product Chemistry: Paradichlorobenzene: Supplemental Information. Project Number: 983/001/08. Unpublished study prepared by The Acta Group, L.L.C. 34 p.
46858300	Oxford & Hill Home Products (2006) Submission of Product Chemistry Data in Support of the Application for Registration of Moth-Be-Gone Moth Balls 1. Transmittal of 1 Study.
46858301	Brookman, D. (2006) Moth-Be-Gone Moth Balls 1: Product Properties - Group A. Unpublished study prepared by Genesis Engineering & Redevelopment, LLC. 17 p.
93083000	Monsanto Company (1990) Reregistration Phase 3 Response: Paradichlorobenzene.
93083001	Downes, J. (1990) Monsanto Company Phase 3 Summary of MRID 40788301. Paradichlorobenzene - Product Identity and Composition. 8 p.
93083002	Downes, J. (1990) Monsanto Company Phase 3 Summary of MRID 40788301. Paradichlorobenzene Analysis and Certification of Product Ingredients. 7 p.
93083003	Downes, J. (1990) Monsanto Company Phase 3 Summary of MRID 40788301. Paradichlorobenzene Physical and Chemical Characteristics. 8 p.
93083004	Downes, J. (1990) Monsanto Company Phase 3 Summary of MRID 40825501. Solubility of Paradichlorobenzene. 7 p.
93083005	Downes, J. (1990) Monsanto Company Phase 3 Summary of MRID 40891801. Paradichlorobenzene - Octanol/Water Partition. 9 p.
93083006	Downes, J. (1990) Monsanto Company Phase 3 Summary of MRID 41157301. Stability of Paradichlorobenzene. 7 p.
93083007	Barter, J.; Nair, R. (1990) Monsanto Company Phase 3 Summary of MRID 41203402. Para-Dichlorobenzene: An Acute Oral Toxicity Study With the Bobwhite: Project No. 264-101. Prepared by Wildlife International Ltd. 10 p.
93083008	Barter, J.; Nair, R. (1990) Monsanto Company Phase 3 Summary of MRID 41203401. Para-Dichlorobenzene: Acute Toxicity to Daphnia magna under Flow-through Conditions: Project No. 390-3003-000-0200-3140. Prepared by Hunter/ESE, Inc. 11 p.
93083009	Barter, J.; Nair, R. (1990) Monsanto Company Phase 3 Summary of MRID 40521001. Acute Toxicity of Pesticides in Adult and Weanling Rats. Prepared by U.S.E.P.A. Health Effects Research Laboratory. 12 p.
93083010	Barter, J.; Nair, R. (1990) Monsanto Company Phase 3 Summary of MRID 40521001. Acute Toxicity of Pesticides in Adult and Weanling Rats. Prepared by

	U.S. E.P.A. Health Effects Research Laboratory. 13 p.
93083011	Barter, J.; Nair, R. (1990) Monsanto Company Phase 3 Summary of MRID 41410901. An Acute Inhalation Toxicity Study of Para-Dichlorobenzene in the Rat: Project No. 89-8230. Prepared by Bio/dynamics, Inc. 10 p.
93083012	Barter, J.; Nair, R. (1990) Monsanto Company Phase 3 Summary of MRID 41315001. A 21-Day Dermal Toxicity Study in Rats with Para-Dichlorobenzene: Project No. 88-3384. Prepared by Bio/dynamics, Inc. 10 p.
93083013	Barter, J.; Nair, R. (1990) Monsanto Company Phase 3 Summary of MRID 40568001. Paradichlorobenzene: Inhalation Teratology Study in Rabbits: Project No. K-1323-(12). Prepared by DOW CHEMICAL U S A. 9 p.
93083014	Barter, J.; Nair, R. (1990) Monsanto Company Phase 3 Summary of MRID 41108801. Two-Generation Reproduction Study of Inhaled Paradichlorobenzene in Sprague-Dawley (CD) Rats: Project No. 86-81-90605. Prepared by Bushy Run Research Center. 12 p.
93083015	Barter, J.; Nair, R. (1990) Monsanto Company Phase 3 Summary of MRID 40521007. in vitro Gene Mutation Assay (HGPRT) in Cultured Chinese Hamster Ovary (CHO) Cells on Para-dichlorobenzene; Also Drosophila Sex-linked Recessive Lethal Test on Para-Dichlorobezene: Project Nos. 10506 and 416-81. Prepared by Bioassay System Corp. 18 p.
93083016	Barter, J.; Nair, R. (1990) Monsanto Company Phase 3 Summary of MRID 40521013. Mutagenicity Evaluation of p-Dichlorobenzene in the CHO HGPRT Forward Mutation Assay: Project No. R 3691. Prepared by Litton Bionetics. 15 p.
93083017	Barter, J.; Nair, R. (1990) Monsanto Company Phase 3 Summary of MRID 40568002. Salmonella Mutagenicity Test Results for 250 Chemicals: Project No. Unknown. Prepared by Case Western Reserve Univ. Dept. of Pediatrics. 9 p.
93083019	Barter, J.; Nair, R. (1990) Monsanto Company Phase 3 Summary of MRID 40521007. Effects of Para-Dichlorobenzene on the in vitro Induction of Sister Chromatid Exchanges in Chinese Hamster Ovary Cells;... Chromosomal Aberrations in Chinese Hamster Ovary Cells;... Chromosomal Aberrations in Rat Bone Marrow Cells: Project Nos. 11135 and 10506. Prepared by Bioassay Systems Corp. 25 p.
93083020	Barter, J.; Nair, R. (1990) Monsanto Company Phase 3 Summary of MRID 40521012. Investigation of p-Dichlorobenzene for Claustogenic [sic] Effects in Mice Using the Micronucleus Test: Project No. T 1021071. Prepared by Bayer AG Institute of Toxicology. 15 p.
93083021	Barter, J.; Nair, R. (1990) Monsanto Company Phase 3 Summary of MRID 40521008. Examination of the Potential of p-Dichlorobenzene to Induce Unscheduled DNA Synthesis or DNA Replication in the in vivo - in vitro Mouse Hepatocyte DNA Repair Assay: Project No. LSC-2603-1. Prepared by SRI International. 13 p.
93083022	Barter, J.; Nair, R. (1990) Monsanto Company Phase 3 Summary of MRID 40521009. Evaluation of the Potential of p-Dichlorobenzene to Induce Unscheduled DNA Synthesis or DNA Replication in the in vivo - in . vitro Rat Kidney DNA

	Repair Assay: Project No. LSC-2603. Prepared by SRI International. 13 p.
93083999	Monsanto Company (1990) Reregistration Phase 3 Response: Paradichlorobenzene. Correspondence and Supporting Material.
93084000	PPG Industries (1990) Reregistration Phase 3 Response: Paradichlorobenzene.
93084001	Lee, R. (1990) PPG Industries Phase 3 Summary of MRID 40811601. Product Identity and Composition: [Paradichlorobenzene]. 5 p.
93084002	Lee, R. (1990) PPG Industries Phase 3 Summary of MRID 40811601. Analysis and Certification of Product Ingredients: [Paradichlorobenzene]. 6 p.
93084003	Lee, R. (1990) PPG Industries Phase 3 Summary of MRID 40811601. Physical and Chemical Characteristics: [Paradichlorobenzene]. 7 p.
93084004	Barter, J.; Nair, R. (1990) PPG Industries Phase 3 Summary of MRID 41203402. Para-Dichlorobenzene: An Acute Oral Toxicity Study with the Bobwhite: Project No. 264-101. Prepared by Wildlife International Ltd. 10 p.
93084005	Barter, J.; Nair, R. (1990) PPG Industries Phase 3 Summary of MRID 41203401. Para-Dichlorobenzene: Acute Toxicity to Daphnia magna under Flow - through Conditions: Project No. 390-3003-000-0200-3140. Prepared by Hunter/ESE, Inc. 11 p.
93084006	Barter, J.; Nair, R. (1990) PPG Industries Phase 3 Summary of MRID 40521001. Acute Toxicity of Pesticides in Adult and Weanling Rats. Prepared by Health Effects Research Laboratory. 12 p.
93084007	Barter, J.; Nair, R. (1990) PPG Industries Phase 3 Summary of MRID 40521001. Acute Toxicity of Pesticides in Adult and Weanling Rats. Prepared by Health Effects Research Laboratory. 13 p.
93084008	Barter, J.; Nair, R. (1990) PPG Industries Phase 3 Summary of MRID 41410901. An Acute Inhalation Toxicity Study of Para-Dichlorobenzene in the Rat: Project No. 89-8230. Prepared by Bio/dynamics, Inc. 10 p.
93084009	Barter, J.; Nair, R. (1990) PPG Industries Phase 3 Summary of MRID 41315001. A 21-Day Dermal Toxicity Study in Rats with Para-Dichlorobenzene: Project No. 88-3384. Prepared by Bio/dynamics, Inc. 10 p.
93084010	Barter, J.; Nair, R. (1990) PPG Industries Phase 3 Summary of MRID 40568001. Paradichlorobenzene: Inhalation Teratology Study in Rabbits: Project No. K-1323-(12). Prepared by DOW CHEMICAL U S A. 9 p.
93084011	Barter, J.; Nair, R. (1990) PPG Industries Phase 3 Summary of MRID 41108801. Two-generation Reproduction Study of Inhaled Paradichlorabenzene in Sprague-Dawley (CD) Rats: Project No. 86-81-90605. Prepared by Bushy Run Research Center. 12 p.
93084012	Barter, J. (1990) PPG Industries Phase 3 Summary of MRID 40568002. Salmonella Mutagenicity Test Results for 250 Chemicals. Prepared by Case Western Reserve Univ. Dept. of Pediatrics. 9 p.

93084014	Barter, J.; Nair, R. (1990) PPG Industries Phase 3 Summary of MRID 40521007. Drosophila Sex-Linked Recessive Lethal Test On Para-Dichlorobenzene; in vitro Gene Mutation Assay (HGPRT Locus) in Cultured Chinese Hamster Ovary (CHO) Cells on Para-dichlorobenzene: Project Nos. 416-81 and 10506. Prepared by University of Wisconsin, Zoology Dept. 18 p.
93084015	Barter, J. (1990) PPG Industries Phase 3 Summary of MRID 40521013. Mutagenicity Evaluation of p-Dichlorobenzene in the CHO HGPRT Forward Mutation Assay: Project No. R 3691. Prepared by Litton Bionetics. 15 p.
93084016	Barter, J. (1990) PPG Industries Phase 3 Summary of MRID 40521012. Investigation of p-Dichlorobenzene for Claustogenic [sic] Effects in Mice Using the Micronucleus Test: Project No. T 1021071. Prepared by Bayer AG. 15 p.
93084018	Barter, J.; Nair, R. (1990) PPG Industries Phase 3 Summary of MRID 40521008. Examination of the Potential of p-Dichlorobenzene to Induce Unscheduled DNA Synthesis or DNA Replication in the in vivo-in vitro Mouse Hepatocyte DNA Repair Assay: Project No. LSC-2603-1. Prepared by SRI International. 13 p.
93084019	Barter, J. (1990) PPG Industries Phase 3 Summary of MRID 40521009. Evaluation of the Potential of p-Dichlorobenzene to Induce Unscheduled DNA Synthesis or DNA Replication in the in vivo-in vitro Rat Kidney Repair Assay: Project No. LSC-2603. Prepared by SRI International. 13 p.
93084999	PPG Industries (1990) Reregistration Phase 3 Response: Paradichlorobenzene. Correspondence and Supporting Material.
93085000	Standard Chlorine Chem Co (1990) Reregistration Phase 3 Response: Paradichlorobenzene.
93085001	Touhey, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 40632001 and Related MRIDs 40548601. Paradichlorobenzene - Product Identity. 14 p.
93085002	Touhey, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 40548602. Analysis of Paradichlorobenzene by Gas Chromatography. 8 p.
93085003	Touhey, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 40621701 and Related MRIDs 40891801. Physical and Chemical Characteristics of Paradichlorobenzene: Determination of Octanol Water Partition Coefficient of Carbon-14- Paradichlorobenzene: Project Nos. 4188-PDCB/37JG2, 4198-PDCB/39JG2, 4208-PDCB/40JG2, 4218-PDCB/41JG2, 4218-PDCB/42JG2; RD33; #15/TDP and ABC #37401. 9 p.
93085004	Touhey, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 41293101. Paradichlorobenzene - Storage Stability: Project No. 2229-PDCB/43JG2. Prepared by Standard Chlorine of Delaware, Inc. 6 p.
93085005	Barter, J.; Nair, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 41203402. Para-dichlorobenzene: An Acute Oral Toxicity Study with the Bobwhite: Project No. 264-101. Prepared by Wildlife International Ltd. 10 p.
93085006	Barter, J.; Nair, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID

	41203401. Para-Dichlorobenzene: Acute Toxicity to Daphnia magna under Flow Through Conditions: Project No. 390-3003-000-0200-3140. Prepared by Hunter/ESE, Inc. 11 p.
93085007	Barter, J.; Nair, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 40521001. Acute Toxicity of Pesticides in Adult and Weanling Rats... Prepared by U.S. Environmental Protection Agency. 12 p.
93085008	Barter, J.; Nair, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 40521001. Acute Toxicity of Pesticides in Adult and Weanling Rats. Prepared by U.S. Environmental Protection Agency. 13 p.
93085009	Barter, J.; Nair, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 41410901. An Acute Inhalation Toxicity Study of Para-Dichlorobenzene in the Rat: Project No. 89-8230. Prepared by Bio/dynamics, Inc. 10 p.
93085010	Barter, J.; Nair, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 41315001. A 21-Day Dermal Toxicity Study in Rats with Para-Dichlorobenzene: Project No. 88-3384. Prepared by Bio/dynamics, Inc. 10 p.
93085011	Barter, J.; Nair, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 40568001. Paradichlorobenzene: Inhalation Teratology Study in Rabbits: Project No. K-1323-(12). Prepared by DOW CHEMICAL U S A. 9 p.
93085012	Barter, J.; Nair, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 41108801. Two-Generation Reproduction Study of Inhaled Paradichlorobenzene in Sprague-Dawley (CD) Rats: Project No. 86-81-90605. Prepared by Bushy Run Research Center. 12 p.
93085013	Barter, J.; Nair, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 40568002. Salmonella Mutagenicity Test Results for 250 Chemicals. Prepared by Case Western Reserve Univ. Dept. of Pediatrics. 9 p.
93085015	Barter, J.; Nair, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 40521013. Mutagenicity Evaluation of p-Dichlorobenzene in the CHO HGPRT Forward Mutation Assay: Project No. R 3691. Prepared by Litton Bionetics. 15 p.
93085016	Barter, J.; Nair, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 40521007. in vitro Gene Mutation Assay (HGPRT Locus) in Cultured Chinese Hamster Ovary (CHO) Cells on Para-Dichlorobenzene; and Drosophilia Sex-linked Recessive Lethal Test on Para- Dichlorobenzene: Project Nos. 10506 and 416-81. Prepared by Bioassay Systems Corp. 19 p.
93085017	Barter, J.; Nair, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 40521012. Investigation of p-Dichlorobenzene for Claustogenic [sic] Effects in Mice Using the Micronucleus Test: Project No. T 1021071. Prepared by Bayer AG Institute of Toxicology. 15 p.
93085018	Barter, J.; Nair, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 40521007. Effects of Para-Dichlorobenzene on the in vitro Induction of Sister Chromatid Exchanges in Chinese Hamster Ovary Cells: Project No. 11135. Prepared by Bioassay Systems Corp. 27 p.

93085019	Barter, J.; Nair, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 40521008. Examination of the Potential of p-Dichlorobenzene to Induce Unscheduled DNA Synthesis or DNA Replication in the in vivo-in vitro Mouse Hepatocyte DNA Repair Assay: Project No. LSC-2603-1. Prepared by SRI International. 13 p.
93085020	Barter, J.; Nair, R. (1990) Standard Chlorine Chem Co Phase 3 Summary of MRID 40521009. Evaluation of the Potential of p-Dichlorobenzene to Induce Unscheduled DNA Synthesis or DNA Replication in the in vivo-in vitro Rat Kidney DNA Repair Assay: Project No. LSC-2603. Prepared by SRI International. 13 p.
93085999	Standard Chlorine Chem Co (1990) Reregistration Phase 3 Response: Paradichlorobenzene. Correspondence and Supporting Material.