Sunshine Act Meetings

Federal Register
Vol. 57, No. 196
Thursday, October 8, 1992

This section of the FEDERAL REGISTER contains notices of meetings published under the "Government in the Sunshine Act" (Pub. L. 94-409) 5 U.S.C. 552b(e)(3).

FEDERAL RESERVE SYSTEM BOARD OF GOVERNORS

TIME AND DATE: 11:00 a.m., Tuesday, October 13, 1992.

PLACE: Marriner S. Eccles Federal Reserve Building, C Street entrance between 20th and 21st Streets, NW., Washington, DC 20551.

STATUS: Closed.

MATTERS TO BE CONSIDERED:

1. Personnel actions (appointments, promotions, assignments, reassignments, and salary actions) involving individual Federal Reserve System employees.
2. Any items carried forward from a previous announced meeting.

CONTACT PERSON FOR MORE INFORMATION: Mr. Joseph R. Coyne, Assistant to the Board; (202) 452-3204. You may call (202) 452-3207, beginning at approximately 5 p.m. two business days before this meeting, for a recorded announcement of bank and bank holding company applications scheduled for the meeting.

Dated: October 5, 1992.

Jennifer J. Johnson,

Associate Secretary of the Board.

[FR Doc. 92-24620 Filed 10-5-92; 4:52 pm]

BILLING CODE 6210-01-M

NATIONAL CREDIT UNION ADMINISTRATION

Notice of Meetings

TIME AND DATE: 9:30 a.m., Tuesday, October 13, 1992.

PLACE: Filene Board Room, 7th Floor, 1776 G Street, NW., Washington, DC 20456.

STATUS: Open.

BOARD BRIEFINGS:

1. Central Liquidity Facility Report and Report on CLF Lending Rate.
2. Insurance Fund Report.

MATTERS TO BE CONSIDERED:

1. Aproval of Minutes of Previous Open Meeting.
2. Proposed Charter Application for Citizens Community Federal Credit Union, Omaha, Nebraska.
3. Proposed Charter Application for South Central Los Angeles Community Development Federal Credit Union, Los Angeles, CA.
4. Proposed Amendment: Part 710, NCUA's Rules and Regulations, Voluntary Liquidation of Federal Credit Unions.
5. Final Amendment: Section 700.1(i), NCUA's Rules and Regulations, Risk Assets.
6. Fiscal Year 1993 Overhead Transfer Rate.

RECESS: 10:45 a.m.

TIME AND DATE: 11:00 a.m., Tuesday, October 13, 1992.

PLACE: Filene Board Room, 7th Floor, 1776 G Street, NW., Washington, DC 20456.

STATUS: Closed.

MATTERS TO BE CONSIDERED:

1. Approval of Minutes of Previous Closed Meeting.
2. Administrative Action under Sections 206 and 208 of the Federal Credit Union Act. Closed pursuant to exemptions (8), (9)(A)(ii), and (9)(B).
3. Central Liquidity Facility Investment Policy. Closed pursuant to exemption (9)(B).
4. National Credit Union Share Insurance Fund Investment Policy. Closed pursuant to exemption (9)(B).
5. Request from a Corporate Credit Union for a Determination under Section 704.1(b) of NCUA's Rules and Regulations. Closed pursuant to exemptions (8) and (9)(A)(ii).
6. Personnel Action. Closed pursuant to exemptions (2), (6), (8), and (10).

FOR MORE INFORMATION CONTACT: Beckey Baker, Secretary of the Board, Telephone (202) 682-9600.

Beckey Baker,

Secretry of the Board.

[FR Doc. 92-24662 Filed 10-6-92; 2:32 pm]

BILLING CODE 7535-01-M

Corrections

Federal Register
Vol. 57, No. 196
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This section of the FEDERAL REGISTER contains editorial corrections of previously published Presidential, Rule, Proposed Rule, and Notice documents. These corrections are prepared by the Office of the Federal Register. Agency prepared corrections are issued as signed documents and appear in the appropriate document categories elsewhere in the issue.

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Health Care Financing Administration

42 CFR Part 447

[BPD-396-F]

RIN 0938-AD 12

Medicare and Medicaid; Requirements for Long Term Care Facilities

Correction

In rule document 92-22313 beginning on page 43922, in the issue of Wednesday, September 23, 1992, make the following correction:

§ 447.255 [Corrected]

On page 43924, in the first column, in § 447.255(a), in the third line, "submitted" should read "substituted" and "of" should read "or".

BILLING CODE 1505-01-D

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Social Security Administration

20 CFR Part 416

[Regulation No. 16]

RIN 0960-AC66

Supplemental Security Income for the Aged, Blind, and Disabled Resources and Exclusions; Definition of Resources

Correction

In rule document 92-18874 beginning on page 35459 in the issue of Monday, August 10, 1992, make the following corrections:

1. On page 35459, in the third column, under **SUMMARY:**, in the fourth line from the bottom, "eligible" should read "ineligible".

2. On page 35460, in the first column, in the fourth line from the bottom, "not" should read "are".

BILLING CODE 1505-01-D

DEPARTMENT OF JUSTICE

Antitrust Division

Notice Pursuant to the National Cooperative Research Act of 1984—"Feasibility Study on Using Molecular Sieves for Diesel NO_x Control"

Correction

In notice document 92-18988 appearing on page 35845 in the issue of Tuesday, August 11, 1992, in the second column, in the third paragraph, in the sixth line, "of" the second time it appears should read "on" and "FR 35887." should read "FR 35877."

BILLING CODE 1505-01-D

federal register

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Part II

Department of the Interior

Bureau of Indian Affairs

Indian Gaming; Notices

DEPARTMENT OF THE INTERIOR

Bureau of Indian Affairs

Indian Gaming

AGENCY: Bureau of Indian Affairs, Interior.

ACTION: Notice of approved Tribal-State Compact.

SUMMARY: Pursuant to 25 U.S.C. 2710, of the Indian Gaming Regulatory Act of 1988 (Pub. L. 100–497), the Secretary of the Interior shall publish, in the Federal Register, notice of approved Tribal-State Compacts for the purpose of engaging in Class III (casino) gambling on Indian reservations. The Assistant Secretary—Indian Affairs, Department of the Interior, through his delegated authority has approved the Southern Ute Indian Tribe—State of Colorado Gaming Compact, which was enacted on August 11, 1992.

DATES: This action is effective on October 8, 1992.

ADDRESSES: Office of Tribal Services, Bureau of Indian Affairs, Department of the Interior, MS/MIB 4603, 1849 "C" Street, NW., Washington, DC 20240.

FOR FURTHER INFORMATION CONTACT: Hilda Manuel, Chief, Division of Tribal Government Services, Bureau of Indian Affairs, Washington, DC 20240, (202) 208–7446.

Dated: October 1, 1992.

William D. Bettenberg,

Acting Assistant Secretary—Indian Affairs.

[FR Doc. 92–24435 Filed 10–7–92; 8:45 am]

BILLING CODE 4310–02–M

federal register

Thursday
October 8, 1992

Part III

Environmental Protection Agency

Daminozide; Notice of Final Determination for Non-Food Uses and Termination of the Daminozide Special Review

ENVIRONMENTAL PROTECTION AGENCY

[OPP-30000/40D; FRL-4163-7]

Daminozide: Notice of Final Determination for Non-Food Uses and Termination of the Daminozide Special Review

AGENCY: Environmental Protection Agency (EPA).
ACTION: Final determination and termination of Special Review.

SUMMARY: This Notice concludes the Special Review of the non-food uses of daminozide and announces the Agency's decision to retain these registrations without requiring modification to the label. This Notice also contains the Agency's revised estimate of the dietary risks based on the conclusions of the 2-year UDMH cancer studies in mice and rats.

ADDRESSES: Requests for a hearing must be submitted to: Hearing Clerk (A-110), Environmental Protection Agency, 401 M St., SW., Washington, DC, 20460.

Additional information supporting this action is available for public inspection from 8 a.m. to 4 p.m., Monday through Friday, except legal holidays in the Public Response and Program Resource Branch, Field Operations Division, (H7506C), Office of Pesticide Programs, Environmental Protection Agency, Room 1132, Crystal Mall #2, 1921 Jefferson Davis Highway, Arlington, VA 22202.

FOR FURTHER INFORMATION CONTACT: By Mail: Thomas Moriarty, Special Review Branch, Special Review and Reregistration Division (H7508W), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. Office Location and Telephone Number: Third Floor, CS #1, 2800 Jefferson Davis Highway, Arlington, VA 22202 (703) 308-8035.

SUPPLEMENTARY INFORMATION:
Electronic Availability: This document is available as an electronic file on *The Federal Bulletin Board* at 9 a.m. on the date of publication in the **Federal Register**. By modem dial 202-512-1387 or call 202-512-1530 for disks or paper copies. This file is available in Postscript, Wordperfect 5.1 and ASCII.

This Notice announces EPA's decision to retain the non-food use registrations of products which contain daminozide as the active ingredient. This Notice concludes EPA's administrative Special Review of the risks and benefits of daminozide which was initiated in a Federal Register notice of July 1984 (49 FR 29186). A notice of Preliminary Determination (PD 2/3) was issued in May 1989 (54 FR 22558), and supporting documents, including the Technical Support Document (TSD), for the PD 2/3 were made available to any requesting party at that time. The Agency received a request by the sole registrant of daminozide products, Uniroyal Chemical Company, in October 1989, to voluntarily withdraw all food-use registrations of daminozide. A notice was published in November 1989 (54 FR 47492) which canceled all food use registrations of daminozide as of November 17, 1989. This Notice concludes EPA's special review of the non-food uses of daminozide.

This Notice is organized into nine units. Unit I is an introduction providing background information and the legal basis for this action. Unit II is a summary of previous regulatory actions concerning the registration of daminozide products. Unit III presents EPA's summary of the toxicological concerns, cancer classification, and comments received in response to EPA's PD2/3. Unit IV contains EPA's exposure assessment, final worker risk estimates and additional comments received in response to the PD 2/3. Unit V contains the benefits associated with daminozide and comments received in response to the PD 2/3. Unit VI contains EPA's reassessment of the dietary risks of daminozide based on the refined cancer potency factor (Q_1^*) and Unit VII summarizes EPA's risk/benefit determination and announces EPA's regulatory action. Finally, Unit VIII announces the availability of the Public Docket and Unit IX lists references contained in this document.

I. Introduction

Daminozide is the common name for butanedioic acid mono (2,2-dimethylhydrazine). The sole registrant, Uniroyal Chemical Company (Uniroyal), produces four products, B-Nine, B-Nine SP, Alar 85, and Alar Technical, which contain daminozide as the active ingredient. Daminozide is a systemic growth regulator registered only for use on ornamental and bedding plants. Daminozide also was registered for use on food crops; however, Uniroyal Chemical Company voluntarily canceled all food use registrations of daminozide on November 14, 1989.

Legal background. Before a pesticide product may be lawfully sold or distributed in either intrastate or interstate commerce, the product must be registered by EPA (FIFRA sections 3(a) and 12(a)(1)). A registration is a license allowing a pesticide product to be sold and distributed for specified uses in accordance with specified use instructions, precautions, and other terms and conditions of a registration.

In order to obtain a registration for a pesticide under FIFRA, an applicant must demonstrate that the pesticide satisfies the statutory standard for registration. The standard requires, among other things, that the pesticide perform its intended function without causing "unreasonable adverse effects on the environment." The term "unreasonable adverse effects on the environment" is defined in FIFRA section 2(bb), as "any unreasonable risk to man or the environment, taking into account the economic, social and environmental costs and benefits of the use of any pesticide." This standard requires a finding that the benefits of the use of the pesticide exceed the risks of use when the pesticide is used in compliance with the terms and conditions of registration or in accordance with commonly recognized practices.

The burden of proving that a pesticide satisfies the statutory standard is on the proponent of registration and continues as long as the registration remains in effect. Under FIFRA section 6, the Administrator may issue a Notice of Intent to Cancel the registration of a pesticide product whenever it is determined that the pesticide product causes unreasonable adverse effects on the environment. EPA created the Special Review process to facilitate the identification of pesticide uses which may not satisfy the statutory requirements for registration and to provide an informal procedure to gather and evaluate information about the risks and benefits of these uses.

A Special Review is initiated if a pesticide meets or exceeds the risk criteria set out in the regulations at 40 CFR part 154. EPA announces that a Special Review is initiated by issuing a notice in the **Federal Register**. Registrants and other interested persons are invited to review the data upon which the Special Review is based and to submit data and information to rebut EPA's conclusions by showing that EPA's initial determination was in error, or by showing that use of the pesticide is not likely to result in any significant risk to human health or the environment. In addition to submitting rebuttal evidence, persons wishing to comment may submit relevant information to aid in the determination of whether the economic, social, and environmental benefits of the pesticide outweigh the risks of use. After reviewing the comments received and other relevant material obtained during the Special Review process, EPA makes a decision

on the future status of registrations of the pesticide.

The Special Review process may be concluded in various ways depending upon the outcome of EPA's risk/benefit assessment. If EPA concludes that all of its risk concerns have been adequately rebutted, the pesticide registration will be maintained unchanged, or if all its risk concerns are adequately addressed through label changes, a special review may be terminated after such label changes. If, however, all risk concerns are not rebutted, EPA will proceed to a full risk/benefit assessment. In determining whether the use of a pesticide poses risks which are greater than its benefits, EPA considers possible changes to the terms and conditions of registration which can reduce risks, and what impacts such modifications may have on the benefits of use. If EPA determines that such changes reduce risks to the level where the benefits outweigh the risks, it may require that such changes be made in the terms and conditions of the registration. Alternatively, EPA may determine that no changes in the terms and conditions of a registration will adequately assure that use of the pesticide will not pose any unreasonable adverse effects. If EPA makes such a determination, it may seek cancellation, and, if necessary, suspension. In either case, EPA must issue a Notice of Intent to Suspend or a Notice of Intent to Cancel the registrations. If the Notice requires changes in the terms and conditions of registration, cancellation may be avoided by making the specified changes set forth in the Notice, if possible. Adversely affected persons, including registrants and applicants for registration, may also request a hearing on the suspension or cancellation of a specified registration or use.

II. Regulatory History

A. Rebuttable Presumption Against Registration

In June 1984, EPA (the Agency) issued a Notice of Rebuttable Presumption Against Registration (RPAR) for Daminozide which initiated what is now called the Special Review Process (40 CFR part 154). The RPAR included the Notice of Initiation of Special Review (PD 1) (49 FR 29186, July 18, 1984), and the Pesticide Registration Standard and Guidance Document. At that time, the Agency was concerned about carcinogenic risk to the general population through dietary exposure to daminozide. Data available at that time indicated that daminozide was carcinogenic in laboratory mice and rats. The Agency was specifically concerned about risk from unsymmetrical dimethylhydrazine (UDMH). UDMH, a known carcinogen in laboratory animals, is a contaminant of commercial daminozide and a metabolite of daminozide once it enters the body.

EPA believed, however, that the risks associated with the non-food uses of daminozide were not significant. The Agency noted that daminozide was not rapidly absorbed through the skin and exposure to applicators was low (Ref. 1).

Through the PD 1, the Agency solicited information from registrants, applicants, and interested parties to help conduct a full risk/benefit analysis of daminozide. Information which the Agency solicited included information on the importance of daminozide to agriculture and information regarding alternative growth regulators such as their efficacy and use patterns.

B. Draft Preliminary and Final Determination (PD 2/3/4), Data Call-In, and Tolerance Extension.

In September 1985 EPA submitted a Draft PD 2/3/4 to the Scientific Advisory Panel (SAP) and the U.S. Department of Agriculture, as required by FIFRA. The Agency intended to proceed with a PD 2/3/4 in order to expedite the special review of daminozide. (A PD 2/3/4 allows the Agency to propose and finalize a regulatory action in one step whereas it is usually completed in two; first by proposing a regulatory action (PD 2/3) then by finalizing a regulatory action (PD 4)).

The SAP believed that the animal cancer data were insufficient to support a quantitative risk assessment and recommended that EPA require additional data before taking regulatory action on daminozide. Although EPA is not legally bound by the SAP's opinion, the Panel is an integral part of Agency decisions. In this case, EPA accepted the Panel's recommendations and did not proceed with the Draft PD 2/3/4 but required additional data, and took a number of steps to reduce risk to the general population as discussed below.

A Data Call-In Notice was issued in 1986 which required a number of additional studies including cancer studies in mice and rats, a greenhouse worker exposure study, and a market basket survey to measure levels of daminozide and UDMH on produce in the grocery store (Ref. 2).

To reduce risk to the general population, the Agency reduced the application rate of daminozide on apples and added to the label an advisory statement which cautioned against the use of daminozide on apples intended for processing. (Levels of UDMH increase when apples are processed). EPA also reduced the tolerance for daminozide residues on apples from 30 ppm to 20 ppm and set the tolerance to expire on July 31, 1987. The Agency intended to reevaluate the daminozide tolerance on apples after the preliminary results of the residue and market basket survey data were available. However, data available at that time (July 1987), showed that the tolerances could not be lowered without making some legally treated apples over tolerance and therefore, subject to seizure. Thus, EPA extended the 20 ppm apple tolerance until January 31, 1989 (51 FR 12889). In early 1989, the Agency reevaluated the tolerance in light of the interim results of the cancer studies.

In January 1989, EPA estimated, based on the interim results of the UDMH cancer studies in rat and mice, that the dietary risk to the general population from daminozide/UDMH was 4.9×10^{-5}. In considering the estimated risk, EPA believed that regulatory action should be pursued but that the daminozide tolerance, due to expire January 31, 1989, could be extended for an additional 18 months without posing an unreasonable risk to the general population.

C. Preliminary Determination to Cancel Certain Daminozide Product Registrations and Draft Notice of Intent to Cancel (PD 2/3)

In preparing the PD 2/3, which was issued in May 1989 (54 FR 22558), EPA reviewed all comments and data submitted in response to the PD 1, the historical toxicity data, and the interim results of the UDMH cancer studies required through the 1986 Data Call-In.

The Agency's primary concern about exposure to daminozide/UDMH was cancer. Although EPA had classified both UDMH and daminozide as Group B2, probable human, carcinogens, (Ref. 3), EPA had identified UDMH as the primary agent of concern. At that time EPA did not estimate risk from daminozide, as it did for UDMH. Although daminozide produced the same types of tumors as did UDMH (hemangiomas/hemangiosarcomas), the incidences of tumors showed trends but no statistical significance by pairwise comparison with controls (Ref. 3).

The interim results of the UDMH cancer studies in mice and rats were received in March 1988. Based on the report from the mouse study, EPA calculated an interim UDMH cancer potency factor (Q_1^*). (Cancer potency is a quantitative measure or estimate of the relationship between exposure to

increasing doses of the chemical substance in question and the increased severity of the carcinogenic effect, such as the number of tumors). EPA believed that vascular tumors (hemangiosarcoma) were appropriate to use in calculating the interim Q_1^* because: (1) It is a relatively uncommon malignant tumor and has a low background rate in laboratory mice and rats; and (2) it is the same type of tumor seen in the earlier UDMH studies (Toth 1973, Toth 1977a, Toth 1977b, and Haun 1984) (Refs. 4, 5, 6, and 7).

Dietary risk was estimated using the interim (Q_1^*) and exposure estimates derived from levels of daminozide residues on treated foods, as observed in the market basket survey, and consumption patterns. EPA estimated dietary risk to the general population from exposure to UDMH to be 4.9×10^{-5}. Full descriptions of exposure estimates and risk calculations, including exposure and risk calculations to various subpopulations, are contained in the Technical Support Document (TSD) (Ref. 3).

Risk from the non-food uses of daminozide was estimated using exposure estimates from a surrogate worker exposure study. Although Uniroyal submitted a daminozide worker exposure study in 1986, it was found to be inadequate to assess exposure, therefore, EPA used surrogate data (Sumagic PRG [Merricks, 1987]) it had on hand to estimate daminozide exposure to greenhouse workers. The Agency estimated risk to a worker performing the three job functions of mixer, loader, and applicator, to be 2×10^{-6} (Ref. 3).

The Agency also conducted a preliminary analysis of the benefits associated with the use of daminozide on both food and non-food crops. The analysis was conducted to determine the potential economic impacts to consumers, retailers, and producers if daminozide was not available. The Agency also considered the biological effects of daminozide, methods of application, and projected biological and economic impacts if daminozide were canceled, as well as the most likely chemical and non-chemical alternatives if daminozide were not available. EPA's preliminary benefit analysis of the following sites is contained in the TSD: apples (several varieties), peanuts, cherries, grapes, peaches, nectarines, pears and tomatoes (tomato transplants), and the non-food uses of daminozide.

EPA believed that the carcinogenic risk posed to the general population from the food uses of daminozide outweighed the benefits and therefore proposed to cancel all food-use registrations of daminozide. However, EPA proposed to retain the non-food uses of daminozide without modification to the label because it believed that the risks posed to greenhouse workers were outweighed by the benefits.

D. Notice of Receipt of Request to Cancel and Termination of Special Review of Food Uses, and Final Tolerance Rule

In October 1989, Uniroyal Chemical Company requested voluntary cancellation of all food-use registrations of daminozide. On November 14, 1989, the Agency published a notice (54 FR 47492) announcing its receipt of this request. That notice announced Uniroyal's commitment to submit the final report of the 2-year UDMH cancer studies and also announced EPA's intention to conduct a final dietary and worker risk assessment based on the conclusions of these studies. Subsequently, the Agency received the final reports of the UDMH cancer studies. In addition, Uniroyal Chemical Company voluntarily submitted worker exposure and metabolism data. The final dietary and worker risk assessments, based on these data, are contained in Units III, IV, VI, and VII of this Notice.

The Agency issued the Proposed Rule to revoke tolerances for daminozide on September 7, 1989 (54 FR 37278) the final tolerance rule for daminozide was published on March 19, 1990 (55 FR 10218), which set all tolerances for daminozide residues on food and feed crops at zero as of May 31, 1991.

E. Conclusion of Special Review (PD 4)

EPA's assessment and final decision regarding the risks and benefits for the non-food uses of daminozide are set forth in this document. This Notice also contains the Agency's reassessment of the dietary risks of daminozide. Based on both newly received data (including the final report of the rat and mouse cancer studies, new worker exposure data, and metabolism data), and historical daminozide data, EPA has determined that benefits from daminozide use on ornamental and bedding crops outweigh the risks to workers. Accordingly, EPA is announcing its decision to retain all non-food use registrations of daminozide without change to the label. Additionally, dietary risks have been reestimated using the final report of the UDMH cancer study in mice. EPA maintains that the dietary risk posed to the general population in 1989 was unreasonable and the Agency does not intend to change its regulatory position on the food-uses of daminozide. A more detailed discussion of the risks and benefits associated with the non-food uses is contained in the latter part of this Notice.

III. Summary of Toxicological Concerns and Agency Evaluation of Comments

The principal effect of concern with daminozide is the carcinogenic potential of UDMH. In 1989, EPA based its Preliminary Determination on the interim results of the UDMH cancer studies in rats and mice (Uniroyal 1988c, 1988d, 1988e). The final report of these studies has been submitted and EPA finds these data appropriate for cancer risk assessment (Ref. 8). EPA has considered, as a whole, the data from both the interim and the final reports of the cancer studies in evaluating the carcinogenic potential of daminozide and UDMH.

A. Carcinogenicity

1. *Hazard identification.* In one study (Uniroyal 1988c), Fisher 344 rats were administered UDMH in their drinking water at concentration levels of 0, 1, 50, or 100 ppm for 2 years. Gross findings included a dose related increase in cloudy corneas in both sexes which was not statistically significant. Non-neoplastic lesions were not observed in the test animals with the exception of bile duct hyperplasia and inflammation of the liver in the highest dosed males and in the mid-dose and high-dose females. The females also showed a statistically significant increasing trend of liver tumors (hepatocellular carcinomas/adenocarcinomas) and of combined liver tumors (hepatocellular adenomas and carcinomas/adenocarcinomas). Females also exhibited a significant increase in combined adenomas and carcinomas in the 50 and 100 ppm concentration groups when compared to controls. There were no other dose-related increases of neoplasms at other sites in females (Ref. 9).

A second study (Uniroyal 1988d), was conducted in which CD-1 mice were administered UDMH in their drinking water for 2 years at concentration levels of 0, 1, 5, or 10 ppm in males and 0, 1, 5, or 20 ppm in females. In the second year of the study, survival decreased in both sexes in all dose groups. However, only the top dose of both the males and females showed a substantial decrease in survival when compared to controls at termination. At week 78, the male mice showed a noticeable decrease in the survival (ranging from 62 percent to 86 percent), when compared to controls. There was an increase in the incidence

of brown pigment in the liver of both males and females in the mid-dose and high-dose groups between 12 and 24 months. Both males and females also showed a significant increase in the number of combined lung tumors (bronchioloalveolar adenoma and/or carcinoma). Male and female mice also showed an increase in the occurrence of bronchioloalveolar adenomas (Ref. 9).

In the third study (Uniroyal 1988e), CD–1 mice were administered UDMH at concentration levels of 0, 40, or 80 ppm in drinking water. The majority of deaths of the test animals occurred in the second year of the study. While there was a significant decrease in the survival of males only in the 80 ppm dose group, the females showed a significant decrease in survival in both the 40 ppm and 80 ppm dose groups. There was a biologically significant dose-related decrease in water consumption in male mice receiving 40 and 80 ppm when compared to controls. There was an increased incidence of lung tumors (alveolar/bronchiolar adenomas) and vascular liver tumors (hemangioma and hemangiosarcomas) which were considered dose related. In the 80 ppm dose group, both sexes showed both a pair-wise comparison, and a significant increasing trend in hemangiosarcomas and bronchioloalveolar tumors. In pair-wise comparison to the controls with the 40 ppm dose group, there was a significant increasing trend of vascular tumors (hemangiosarcomas) and combined vascular and lung adenomas (hemangiomas and lung adenomas/carcinomas). The males in the 40 ppm dose group also showed an increase in the incidence of combined vascular tumors (hemangiomas and hemangioma sarcomas), combined lung tumors (lung adenomas/carcinomas), and combined hepatocellular tumors (adenomas and/or carcinomas).

Female mice in the 80 ppm dose group showed significant increased trends and significant pair-wise comparison to controls for vascular tumors (hemangiosarcomas), combined vascular tumors (hemangiomas and hemangiosarcomas), lung tumors (bronchioloalveolar adenomas) and combined lung tumors (bronchioloalveolar adenomas and bronchioloalveolar carcinomas). In pair-wise comparison to controls, the 40 ppm dose-group showed a significant increase in vascular tumors (hemangiosarcomas), combined vascular tumors (hemangiomas and hemangioma sarcomas), in hepatocellular adenomas, in lung tumors (bronchioloalveolar adenomas) and combined lung tumors (bronchioloalveolar adenomas and/or carcinomas) (Ref. 9)

2. *Metabolism.* A metabolism study in miniature swine was submitted to the Agency in 1987 (Ref. 10). Daminozide was administered in a single 5 mg/kg oral dose and after 96 hours was found in almost all tissues at levels up to 73 ppb, with the liver and kidney containing the highest levels. Analysis indicated that both ^{14}C-UDMH and ^{14}C-dimethylnitrosamine (DMN), which are derived from ^{14}C-daminozide, were excreted in the urine. From urinalysis, EPA estimated that only about 16 percent of the oral dose could be shown to be absorbed and approximately 1 percent (1 ppm) of daminozide is metabolized to UDMH. DMN levels in the urine, collected in the first 24 hours, ranged from 0.01 to 0.89 ppm.

3. *Mutagenicity.* While daminozide has been demonstrated to be negative for mutagenicity in a number of studies, UDMH has shown positive mutagenic activity in various other studies which have been submitted to the Agency. The Agency also notes that the open literature reports UDMH as positive for mutagenicity. Based on the available information, the Agency remains concerned about the mutagenic potential of UDMH (Refs. 11, 12, 13, 14, 15, and 16), although the available data does not conclusively indicate whether UDMH is mutagenic. In addition, further metabolism of UDMH can result in the formation of DMN, a well known mutagen.

B. Unit Risk (Q_1^*)

EPA calculated the final Q_1^* based on the incidence of hemangiosarcomas from all sites of the male CD–1 mouse study (the combined report of Uniroyal 1988d and Uniroyal 1988e) (Ref. 17). The Agency did not combine the incidence of the hemangioma with that of the incidence of the hemangiosarcoma in deriving the cancer potency factor because the data were insufficient to demonstrate evidence that the benign hemangioma progressed to the malignant hemangiosarcoma (Ref. 18). The number of hemangiomas were few and, even if included, would only marginally affect the unit risk estimate.

The Agency is also aware of the increased incidence of lung tumors in both the lower dose CD–1 mouse study and in the higher dose CD–1 mouse study. However, the refined unit risk estimate of UDMH (the final UDMH Q_1^*) did not reflect the incidence of these tumors for the following reasons: (1) Historical incidences of lung tumors in the CD–1 male mouse were high, ranging from 17 percent to 52 percent; (2) incidences of lung adenomas and lung carcinomas in the two highest dose groups (40 and 80 ppm) were significantly higher than controls but were not dose-related; (3) the lung tumors were found only at interim or terminal sacrifice, or when animals died at unscheduled times during the study; (4) the hemangiosarcoma, which has a low background incidence in CD–1 mice, was a rapidly fatal tumor that was observed throughout the study; and, (5) the lung tumors were not able to be correctly evaluated by the same statistical method as the hemangiosarcoma (Ref. 18). The unit risk estimate of lung tumors alone, of hemangiosarcomas alone, and of the combined incidence of lung tumors and hemangiosarcomas were computed. The unit risk estimate of the combined tumors was within one order of magnitude of that of the unit risk estimate of the hemangiosarcoma. Use of either the combined unit risk estimate or that of the hemangiosarcoma alone would have a similar impact on the final regulatory decision.

Finally, the Agency did not use data from the rat study to estimate a UDMH Q_1^* because only a small number of tumors occurred in only one sex and only at relatively high doses. The Agency believes that the responses observed in the rat study contrasted with the concerns raised by the responses seen in the mouse studies (Ref. 18).

A separate cancer potency factor was calculated using data from male mice $(0.46\ (mg/kg/day)^{-1})$ and data from the female mice $(0.31\ (mg/kg/day)^{-1})$. EPA used the more conservative Q_1^* from the male mice, $0.46\ (mg/kg/day)^{-1}$, for the final risk assessment (Ref. 19). Because both sexes of mice had statistically significant increases in mortality with increasing doses of UDMH, hemangiosarcomas from all sites were evaluated by Peto's Prevalence test and the cancer potency factor was evaluated by the time-to-tumor Weibull83 model (Ref. 17).

C. Cancer Classification

EPA classified UDMH and the parent compound daminozide as Group B2 carcinogens using the weight-of-the-evidence approach and following the classification scheme set forth in EPA's Carcinogen Risk Assessment Guidelines (51 FR 33992, September 24, 1986). "Weight-of-the-evidence" is an approach the Agency uses to evaluate how likely an agent is to be a human carcinogen by taking into consideration the quality and adequacy of the data and the kinds and consistency of responses induced by a suspect

carcinogen. Using this approach the Agency has determined that there is sufficient evidence from animals to consider the agent(s) probable human carcinogens. Evidence is "sufficient" for an agent to be classified as a probable human carcinogen if there is an increased incidence of tumors: (a) In multiple species or strains of test animals; or (b) in multiple experiments, for example, with different dose levels or routes of administration; or (c) to an unusual degree in a single experiment with regard to high incidence, unusual site or type of tumor, or early age at onset.

UDMH is an inherent component of commercial daminozide and daminozide also breaks down to UDMH. The Agency, therefore, has classified both the metabolite, UDMH, and the parent, daminozide, as B2 carcinogens (Ref. 9) based on the following evidence:

(1) Administration of UDMH to female rats for 2 years was associated with a significant increase of combined liver tumors (carcinomas, and combined adenomas and carcinomas). In male and female mice, there was a statistically significant increase in the incidence of lung tumors.

(2) Administration of UDMH to male and female mice was associated with a significant increased incidence of vascular tumors (hemangiosarcomas and combined hemangiomas and hemangiosarcomas) at the mid-dose and high-dose levels.

(3) UDMH is structurally related to other hydrazine compounds (such as 1,2 dimethylhydrazine and monomethylhydrazine) which produce vascular and lung tumors.

(4) Data from a metabolism study in miniature pigs indicated the presence of DMN in the urine. DMN has been reported to produce vascular and pulmonary tumors identical to those evoked by both daminozide and UDMH.

(5) The mutagenicity concern for both UDMH and DMN also supports the Agency's cancer classification.

D. Comments and EPA Response

In response to the PD 2/3, EPA received comments regarding the Agency's evaluation of daminozide (Ref. 20). Several comments were submitted regarding the Agency's toxicological evaluation of daminozide/UDMH. A summary of these comments and the Agency's response follows.

Comment. Uniroyal believes that the Group B2 cancer classification of daminozide is inappropriate and that the weight-of-the-evidence supports a finding that daminozide is not carcinogenic. Uniroyal cited a 1988 study in which rats were administered daminozide in doses up to 10,000 ppm with no reported carcinogenic effects related to the administration of daminozide. Uniroyal also believes that several studies (Toth 77 and NCI 78), which the Agency used to support its regulatory decision, are not appropriate for cancer risk assessment because of irregularities in the design of the studies and in the way the studies were conducted.

EPA Response. With respect to the cancer classification of daminozide, the Agency recognizes that the cancer study in rats, as cited above, did not produce an overt incidence of tumors, as compared to the responses observed in mice. Additionally, the Agency notes that the gastrointestinal tract of various animal species to which alar is exposed, vary considerably and some species are more able to tolerate metabolic insult while others have a greater capability to cause (by metabolic conversion) or allow (due to appropriate pH condition) the breakdown of daminozide to UDMH. Since daminozide has been shown to breakdown to UDMH in several species, e.g., mice, guinea pig and swine, although not in the rat, the Agency believes that it is only appropriate that both the parent compound, daminozide, and the metabolite compound, UDMH, be classified as Group B2 carcinogens.

With respect to the Agency's use of the Toth 77 and NCI 78 studies, the Agency did not base its 1989 proposed regulatory decision on these two studies, rather the Agency used these two studies only as support for its proposed regulatory decision. (Indeed, the Scientific Advisory Panel recommended that the Agency not perform a quantitative risk assessment based on these studies.) The Agency, therefore, called for more definitive cancer data through a Data Call In, issued in 1986. The cancer studies in mice and rats provided the basis for the Agency's 1989 proposed regulatory decision.

Comment. Uniroyal believes that the dose levels used in the higher-dose cancer study in mice (40 or 80 ppm) exceed the Maximum Tolerated Dose (MTD), and therefore, the study is inappropriate to use for human health risk assessment. Uniroyal contends that the administered dose levels produced extreme levels of toxicity in the test animals, resulting in an increased rate of mortality. Uniroyal believes the high rate of mortality in the test animals makes data produced from this study highly questionable.

EPA Response. The Agency requested an additional carcinogenicity study in mice at doses of 0, 40, or 80 ppm because it did not believe that the MTD would be achieved with doses of 10 or 20 ppm of UDMH in the lower dose studies. The Agency consulted with other governmental testing facilities knowledgeable in setting test dose levels in cancer studies in order to establish dosing levels which should be administered to show whether UDMH was in fact carcinogenic.

Although the top doses produced some toxicity, the Agency believes that the high mortality, resulting from tumor rupture, cannot be attributed to exceedance of the MTD. Additionally, data from both higher dose and lower dose cancer studies with UDMH, when considered together show a good dose relationship with statistical significance, thereby arguing against the MTD being exceeded. The Agency, therefore, considered it appropriate to use the data from both the higher dose and the lower dose studies to assess human risk.

Comment. Uniroyal believes that the open literature on UDMH mutagenicity, which supports EPA's concern, is not accurate. UDMH mutagenicity data, as reported in the open literature, show that mutagenic responses are associated with cytotoxicity and are found only in studies where the test material was contaminated with dimethylnitrosamine (DMN).

EPA Response. The Agency believes that at least a portion of UDMH is nitrosated in humans, as it is in some animals, such as mice, due to the gastric acid secretions of a low pH. The Agency realizes that nitrosation does not occur in all mutagenicity studies. However, the Agency maintains a concern for the mutagenic potential of UDMH because it is capable of nitrosating, in the human, to DMN which is a known mutagenic agent.

IV. Worker Exposure and Risk

At the time of the PD 2/3, the Agency made a number of assumptions in estimating worker exposure to UDMH because of the limited data available at that time. Since then, the Agency has received a number of studies which have allowed EPA to refine the exposure assessment. Exposure to UDMH comes from two sources: (1) Conversion of daminozide to UDMH when it is ingested or absorbed through the skin or lungs; and (2) presence of UDMH as a contaminant in the commercial product and conversion of daminozide to UDMH when left standing in the mixing tank. The total risk from UDMH is estimated by adding together the individual risk from each source of exposure to UDMH.

A. Worker Exposure

A worker exposure study submitted by Uniroyal in 1990 measured dermal and inhalation exposure to daminozide from application to ornamentals in a greenhouse. Exposure was monitored separately for the mixer/loader job function and the applicator job function.

The Agency calculates the unit of exposure to daminozide by dividing the total dermal and inhalation exposure by the volume of pesticide handled. Actual dermal exposure to the body (exposure to the skin under the clothing) was measured using whole body dosimeters (long cotton briefs worn under the workers' typical clothing and over the workers' underwear). Dermal exposure to the face and neck was measured by extracts from swabs and exposure to the hands was measured from washing in detergent or rinsing in distilled water. Total dermal exposure was measured as the sum of all the residues from the upper and lower body dosimeters and residues measured from the facial and neck swab and hand rinse (Ref. 21).

Inhalation exposure was measured with an air sampling pump attached to the collar of the worker. Calculations for inhalation exposure were based on a respiration rate of 45 liters/minute for all job functions (Ref. 21).

Based on information provided by commercial growers and Uniroyal, EPA used the following parameters to estimate exposure to workers in both large and small greenhouses: (1) Workers in a large-greenhouse operation handle approximately 24 pounds of daminozide annually and small-greenhouse workers handle 10 pounds annually; (2) maximum exposure to a worker was estimated assuming that a worker will have a combined job function of mixer, loader, and applicator; (3) daminozide is not applied on consecutive days and the maximum period of exposure for any one application is 5 hours; (4) maximum concentration of the active ingredient is used (5,000 ppm solution); and is applied two times per year on multiple crops; and (5) daminozide is applied as a fine spray (as opposed to a coarse spray) which results in higher exposure (Ref. 22).

1. *Exposure to UDMH metabolized from daminozide.* Based on the miniature pig metabolism study, EPA has determined that upon entering the gut, about 1 percent of daminozide is metabolized to UDMH (Ref. 10). However, a worker's dermal and/or inhalation exposure to daminozide most likely does not result in metabolic conversion of daminozide to UDMH in the gut but elsewhere in the body e.g., the bloodstream. Because the exact rate of metabolic conversion in the body is not known, EPA assumes it to be the same as the 1 percent rate at which daminozide is metabolized to UDMH in the gut. EPA believes that this may be an overestimation because the metabolic conversion rate in the gut is generally higher (due to pH), than in other parts of the body. A worker's exposure to UDMH which is metabolically converted from daminozide is summarized in Column A of Tables 1a and 1b. in Unit. IV.A.2 of this notice.

2. *Exposure to UDMH from contamination and hydrolysis of daminozide.* The other source of UDMH exposure is from that amount of UDMH which is present as a contaminant of the commercial daminozide product. Commercial daminozide is comprised of 0.005 percent UDMH (Ref. 3). Exposure to UDMH also comes from the conversion (hydrolysis) of daminozide to UDMH when a solution of daminozide is mixed and stands in the tank before being used. EPA calculates that 0.012 percent of a daminozide solution hydrolyzes to UDMH when allowed to stand in the tank for 24 hours (the daminozide label states that spray and stock solutions must be used within 24 hours) (Ref. 22). Estimated exposure to UDMH as a contaminant, and UDMH as a hydrolysis product, is calculated as 0.005 percent and 0.012 percent respectively, of exposure to the parent compound, daminozide. A worker's dermal exposure to UDMH as a contaminant and hydrolysis product of daminozide is summarized in columns B and C of the following Table 1a:

TABLE 1a.—DERMAL EXPOSURE TO DAMINOZIDE AND UDMH

(in mg/kg/year, for combined function of mixer/loader/applicator)

Site	Daminozide	UDMH		
		A	B	C
	Exposure to daminozide (parent)	1 percent UDMH metabolized (in the body from the parent)	0.005 percent UDMH as part of the parent (contaminant)	UDMH hydrolyzed from the parent (0.012 percent)
Large Greenhouses	0.18	1.8×10^{-3}	9.0×10^{-6}	2.2×10^{-5}
Small Greenhouses	0.075	0.75×10^{-3}	3.8×10^{-6}	9.0×10^{-6}

A worker's inhalation exposure to UDMH which is metabolically converted from daminozide, which is a contaminant of commercial daminozide and is hydrolized from commercial daminozide is summarized in columns A, B, and C, respectively of the following Table 1b:

TABLE 1b.—INHALATION EXPOSURE TO DAMINOZIDE AND UDMH

(in mg/kg/year, for combined function of mixer/loader/applicator)

Site	Daminozide	UDMH		
		A	B	C
	Exposure to daminozide (parent)	1 percent UDMH metabolized (in the body from the parent)	0.005 percent UDMH as part of the parent (contaminant)	UDMH hydrolyzed from the parent (0.012 percent)
Large Greenhouses	0.12	1.2×10^{-3}	6.0×10^{-6}	1.4×10^{-5}

TABLE 1b.—INHALATION EXPOSURE TO DAMINOZIDE AND UDMH—Continued

(in mg/kg/year, for combined function of mixer/loader/applicator)

Site	Daminozide	UDMH		
	Exposure to daminozide (parent)	A	B	C
		1 percent UDMH metabolized (in the body from the parent)	0.005 percent UDMH as part of the parent (contaminant)	UDMH hydrolyzed from the parent (0.012 percent)
Small Greenhouses	0.049	4.9×10^{-4}	2.5×10^{-6}	5.9×10^{-6}

B. Absorption

1. *UDMH as a contaminant and hydrolyzed from daminozide.* The UDMH which is a contaminant of daminozide and which is hydrolyzed from daminozide comes into contact with the worker as UDMH per se and therefore, the rate of dermal absorption of UDMH is necessary to determine the dose.

A dermal absorption study was recently submitted by Uniroyal which demonstrated dermal absorption and bioavailability of UDMH in rats (Ref. 23). Based on this study, the bioavailability of UDMH for the treatment group which most closely matched a worker's potential exposure ranged from 11 percent to 24 percent. EPA used a UDMH dermal absorption rate of 20 percent as a reasonable worst-case scenario (Ref. 24).

The Agency assumes that 100 percent of the UDMH which is present as a contaminant of daminozide or is hydrolyzed from daminozide is absorbed into the lungs.

2. *UDMH which is metabolically converted from daminozide.* Metabolic conversion of daminozide to UDMH occurs once daminozide has entered the body. The rate of dermal absorption of daminozide is known to be 1 percent and the amount of daminozide which is metabolically converted to UDMH once it enters the body, is assumed to be 1 percent (Ref. 25).

EPA also assumes that 100 percent of that which is metabolically converted from daminozide to UDMH is absorbed into the lungs (Ref. 24).

C. Risk Characterization

Lifetime risk to workers may be estimated by converting exposure estimates to a lifetime average daily dose (LADD) and multiplying by the refined UDMH Q_1^* of 0.46 $(mg/kg/day)^{-1}$. The LADD converts yearly exposure to an average daily dose over a worker's lifetime (EPA assumes a professional applicator works 35 years of a 70-year lifetime). The Agency has calculated risk to workers using an approach which measures exposure to UDMH. Exposure to UDMH comes from three sources; as a contaminant of daminozide, as a hydrolysis product of daminozide and as a metabolic break down product of daminozide.

Inhalation and dermal risk from UDMH which is metabolically converted from daminozide is broken down in the following Table 2a:

TABLE 2a.—RISK FROM UDMH WHICH IS METABOLICALLY CONVERTED FROM DAMINOZIDE

Site	Dose[1] (mg/kg/day)	LADD (mg/kg/day)	Q_1^* $(mg/kg/day^{-1})$	Lifetime Risk
Large Greenhouse				
Inhalation	4.8×10^{-4}	6.6×10^{-7}	0.46	3.0×10^{-7}
Dermal	7.2×10^{-6}	9.9×10^{-9}	0.46	4.6×10^{-9}
Small Greenhouse				
Inhalation	2.0×10^{-4}	2.7×10^{-7}	0.46	1.2×10^{-7}
Dermal	3.0×10^{-6}	4.1×10^{-9}	0.46	1.9×10^{-9}

[1] Dose values are derived from Column A of Table 1a and 1b. Inhalation values are adjusted for molecular weight (UDMH is 40 percent by weight of daminozide). Dermal values are adjusted for molecular weight and dermal absorption (daminozide is dermally adsorbed at a rate of 1 percent).

Inhalation and dermal risk from UDMH which is a contaminant of, and hydrolized from commercial daminozide is broken down in the following Table 2b:

TABLE 2b.—RISK FROM UDMH AS A CONTAMINANT AND HYDROLYSIS PRODUCTS OF DAMINOZIDE

Site	Dose[1] (mg/kg/day)	LADD (mg/kg/day)	Q_1^* $(mg/kg/day^{-1})$	Lifetime Risk
Large Greenhouse				
Inhalation	1.2×10^{-5}	1.6×10^{-8}	0.46	7.4×10^{-9}
Dermal	3.6×10^{-6}	4.9×10^{-9}	0.46	2.3×10^{-9}
Small Greenhouse				
Inhalation	4.9×10^{-6}	6.7×10^{-9}	0.46	3.1×10^{-9}
Dermal	1.5×10^{-6}	2.0×10^{-9}	0.46	9.2×10^{-10}

[1] Dose values are derived by adding values from Columns B and C of Tables 1a and 1b. Inhalation values are taken from Column C and adjusted by 40 percent and added to Column B, dermal values are taken from Column B adjusted by 20 percent and added to Column C which is adjusted by 20 percent and 40 percent.

Risk from UDMH is the sum of the risks posed by UDMH from all three sources of exposure to UDMH. Incorporating a number of worst-case assumptions stated earlier in this Notice, EPA estimates upper-bound lifetime risk to workers in large greenhouses to be 3.1×10^{-7} and to workers in small greenhouses to be 1.2×10^{-7}, as summarized in the following Table 3 (Ref. 24):

TABLE 3.—TOTAL LIFETIME RISK FROM UDMH[1]

Site	Risk
Large Greenhouses	3.1×10^{-7}
Small Greenhouses	1.2×10^{-7}

[1] Includes risk from all sources, combined inhalation and dermal exposure and for the combined function of mixer/loader and applicator.

D. Risk From Daminozide

The Agency has regulated daminozide based on a risk estimate using an approach that measures exposure to UDMH. The Agency has also conducted an alternative UDMH risk assessment based on an approach that measures the effects of daminozide per se, since daminozide is also a Group B2 carcinogen. The Agency used a daminozide Q_1^* and estimates of exposure to daminozide to estimate worker risk. Based on this alternative approach, the Agency estimates upper-bound lifetime risk to workers to be 1.5×10^{-6} and 5.8×10^{-7}, for large and small greenhouses respectively. Although the Agency has performed this alternative risk assessment based on daminozide, the Agency believes that the preferable method to estimating risk is to measure exposure from UDMH per se. Therefore, the Agency has based its regulatory decision on risk estimates which come from measuring exposure to UDMH. The risk estimate based on daminozide is explained in full detail in the *Addendum to the Daminozide Risk Assessment*, available in the public docket.

E. Comments and EPA's Response

Only one comment was received regarding the Agency's non-dietary risk assessment. This comment and the Agency's response are summarized below.

Comment. Uniroyal believes that exposure estimates taken from the surrogate worker exposure study, (Sumagic PRG [Merricks, 1987]), which the Agency used to estimate exposure for the PD 2/3, are too high. Uniroyal also cites a surrogate study available in the open literature which shows that exposure values to workers are lower than those used by the Agency.

Response. At the time of the PD 2/3, the Agency chose to use the surrogate data which were available and considered appropriate instead of searching through the open literature for another appropriate exposure study. As stated earlier in this Notice, EPA found that risk to greenhouse workers, based on the surrogate exposure data, was acceptable.

The current exposure assessment incorporates a number of assumptions which are different from those incorporated into the exposure estimates of the PD 2/3; therefore, a direct comparison between the two is not possible. However, although the present exposure estimates and those contained in the PD 2/3 are based on different assumptions, EPA believes that the present exposure estimates are the most accurate measure of exposure available.

V. Summary of Benefits Assessment and Agency Evaluation of Comments

The benefits of a pesticide product are characterized by estimating the potential economic impact to industry, retailers, and consumers if that product were no longer available and more expensive or less efficacious alternatives are used.

Daminozide is a plant growth regulator used on a number of bedding plants and other crops including the following: chrysanthemums, azaleas, easter lilies, and hydrangeas. Daminozide is used to create a more compact plant with greener foliage (i.e., thicker and less elongated stems), to increase plant longevity, and to facilitate plant transport. Growers like daminozide because of its predictable effects and ease of application ("spray to run-off"). In 1989, EPA estimated that 90 percent of all potted chrysanthemums and 40 percent to 50 percent of the 65 million square feet of bedding plants were treated with daminozide. EPA believes that the use of daminozide on bedding plants, mums, and poinsettias has remained relatively constant.

There are four likely chemical alternatives to daminozide: uniconazole, ancymidol, chlormequat, and paclobutrazol. In addition, there are non-chemical controls such as withholding water or fertilizer, controlling light, and maintaining lower room temperatures. No single chemical alternative, however, can produce the same effects as daminozide. All the chemical alternatives are limited by either a narrower use spectrum, phytotoxic effects, or higher costs. Non-chemical controls are also considered less desirable because of adverse effects on the plants such as delayed flowering, discoloration, and smaller leaves.

To produce the same effects as daminozide, several chemical alternatives would have to be used in combination. The result would be increased cost (estimated to range from 10 to 20 times higher) and a lower quality of plant.

EPA currently estimates that the potential economic loss from cancellation of daminozide would be no less than $15 million and could be considerably higher (Ref. 26). This estimate is based on the incremental increase in costs resulting from the substitution of alternatives for daminozide.

Comments and EPA's Response. The Agency received one written comment in response to the PD 2/3 regarding the Agency's benefits analysis. This comment and the Agency's response are summarized below:

Comment. Uniroyal stated that EPA underestimated the benefits of daminozide use on ornamentals. The Society of American Florists and the Professional Plant Growers Association also submitted written comments in support of this position.

Response. Although Uniroyal agreed with EPA's estimate of percent crop treated, Uniroyal's figures for gross poundage of daminozide used on ornamentals are higher than those used by the Agency. EPA accepts the Uniroyal number for usage of daminozide on ornamentals.

Uniroyal also states that, based on the opinions of five university horticulturists and extension personnel, the added economic value to certain crops treated with daminozide ranges from 10 percent to 75 percent. However, without information on consumer acceptance—and willingness to pay for treated versus non-treated plants, it is not possible to judge the accuracy of these estimates.

VI. Final Assessment of the Dietary Risks

In the Notice of Voluntary Cancellation (54 FR 47492), EPA stated that it would revise its dietary risk assessment based on the final report of the UDMH cancer studies. As stated earlier in this document, EPA has reviewed the final UDMH cancer data and has refined the UDMH Q_1^*. Using this refined Q_1^* $(0.46\ (mg/kg/day)^{-1})$, and the dietary exposure estimates contained in the PD 2/3, EPA has revised the upper-bound lifetime dietary risk estimate in the PD 2/3 of 4.9×10^{-5} for the general population to 2.6×10^{-5} (Ref. 27). In light of the revised lifetime

dietary risk estimate of 2.6×10^{-5}, and the benefits of the food uses as estimated in 1989, EPA believes that it would have pursued the same course of action as that taken in 1989. Therefore, the revised dietary risk assessment does not change the Agency's regulatory or scientific position on the food-uses of daminozide.

In general, the Agency's risk assessment methodology may overestimate risk. However, it has been designed to avoid underestimating risk and, therefore, allows the Agency to act in a protective manner. The revised dietary risk assessment supports EPA's 1989 position that the dietary risks posed by the food uses of daminozide generally presented an unreasonable risk to human health. The Agency believes that its proposed regulatory action in 1989 on the food uses of daminozide was protective of public health.

VII. Risk/Benefit Analysis and Announcement of Termination of the Daminozide Special Review.

Based on the information summarized and presented in this Notice, EPA has determined that the non-food uses of daminozide, as currently registered, do not pose an unreasonable risk to workers (mixer/loaders and/or applicators). Given the magnitude of the benefits from the non-food uses of daminozide and the negligible risks posed to persons exposed to daminozide while working with it, EPA is announcing its decision to allow the continued uses of daminozide on the non-food use crops as presently registered.

The Agency estimates the lifetime risk to workers from exposure to UDMH to be 10^{-7} and estimates that the potential economic impacts from cancellation of daminozide would be no less than $15 million but could be considerably higher.

The cost-effectiveness (C-E) coefficient is a tool used to compare the estimated loss of benefits from cancellation of daminozide to the estimated reduction in carcinogenic risk from a particular use. It is an estimate of the societal cost per cancer case avoided. EPA has estimated that the C-E of cancellation of the non-food uses of daminozide is approximately $1 billion per theoretical cancer case avoided (Ref. 28). The Agency recognizes that the C-E coefficient has limitations and uses it only as a guide, not a decision tool, in the risk/benefit analysis determination.

VIII. Availability of the Public Docket

Pursuant to 40 CFR 154.15, the Agency has established a public docket (OPP-30000/40D) for the Daminozide Special Review. This public docket includes: (1) This Notice; (2) any other notices pertinent to the Daminozide Special Review; (3) non-Confidential Business Information (CBI) documents and copies of written comments or other materials submitted to the Agency in response to this Notice or any other Notice, and any other documents regarding daminozide submitted at any time during the Special Review process by any person outside the government; (4) a transcript of all public meetings held by the Agency for the purpose of gathering information on daminozide; (5) memoranda describing each meeting held during the Special Review process between Agency personnel and any person outside the government pertaining to daminozide; and (6) a current index of materials in the public docket.

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Dated: September 28, 1992.

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Part IV

Environmental Protection Agency

Amitrole; Preliminary Determination To Terminate Special Review

ENVIRONMENTAL PROTECTION AGENCY

[OPP-30000/38A; FRL 4164-1]

Amitrole; Preliminary Determination To Terminate Special Review

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed decision to terminate Special Review.

SUMMARY: This Notice sets forth EPA's preliminary determination regarding the continued registration of pesticide products containing amitrole and sets forth the Agency's assessment of the risks and benefits associated with the pesticidal uses of amitrole. On May 15, 1984, the Agency issued a Notice of Special Review of pesticide products containing amitrole based on carcinogenic concerns (49 FR 20546). This Notice proposes to terminate the amitrole Special Review based on the Agency's determination that the benefits of use outweigh the risks.

DATES: Written comments on this Notice must be received on or before November 9, 1992.

ADDRESS: Submit three copies of written comments, bearing the document control number "OPP-30000/38A; FRL 4164-1" by mail to: Public Docket and Freedom of Information Section, Field Operations Division (H7506C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. In person, bring comments to: Rm. 1132, Crystal Mall #2, 1921 Jefferson Davis Highway, Arlington, VA.

Information submitted in any comment concerning this Notice may be claimed confidential by marking any part or all of that information as "Confidential Business Information" (CBI). Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. A copy of the comment that does not contain CBI must be submitted for inclusion in the public record. Information not marked CBI may be publicly disclosed by EPA without prior notice to the submitter. All non-CBI written comments and the correspondence index will be available for public inspection and copying in Rm. 1132 at the Virginia address given above, from 8 a.m. to 4 p.m., Monday through Friday, excluding legal holidays.

FOR FURTHER INFORMATION CONTACT: Philip J. Poli, Review Manager, Special Review Branch, Special Review and Reregistration Division (H7508W), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. Office location and telephone number: Third floor, Westfield Bldg., 2800 Jefferson Davis Highway, Arlington, VA. (703) 308-8038.

SUPPLEMENTARY INFORMATION:

Electronic Availability: This document is available as an electronic file on the Federal Bulletin Board at 9 a.m. on the date of publication in the **Federal Register**. By modem dial 202-512-1387 or call 202-512-1530 for disks or paper copies. This file is available in Postscript, Wordperfect 5.1 and ASCII.

This document presents the basis for the Agency's proposed decision to terminate the Special Review of amitrole.

I. Introduction

A. Summary

Amitrole is the common name for 3-amino-1,2,4-triazole. It is most commonly sold under the trade names AMIZOL and Amitrol T, and is formulated both as a wettable powder and a liquid concentrate.

Amitrole was first registered as an herbicide under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) in 1956. It is a systemic broad spectrum, post-emergence herbicide that is used to control many annual and perennial broadleaf weeds, grasses and woody species. Amitrole is classified by EPA as a Restricted Use pesticide [Ref. 1]. Section 3(d) of FIFRA specifies that only certified applicators trained for and familiar with pesticide use, or persons under their direct supervision, can use amitrole containing products. The current registered uses of amitrole are limited to non-crop, commercial sites. All amitrole food uses were canceled by the EPA in 1971 because of the carcinogenic potential from dietary exposure.

Currently, amitrole is registered for use on land surrounding commercial, industrial and farm premises, on rights-of-way, public utilities, and nurseries. Under the current use pattern, the principal pathway for human exposure is by the dermal route resulting from mixing, loading and applying the pesticide.

EPA's Special Review was initiated to address the use of amitrole on non-crop sites and by homeowners, and examined the carcinogenic risk to mixers, loaders and applicators. Since the time the Special Review was initiated, the registrant has taken voluntarily actions which have reduced worker exposure to amitrole. These actions include deletion of high exposure application methods such as knapsack sprayers, adoption of a "no-glug" container design for the liquid formulation to reduce splashing while pouring, addition of protective clothing requirements to labels, and packaging of the wettable powder formulation in water soluble packets. Additionally, the registrant has canceled all homeowner products.

EPA has completed its risk/benefit analysis of amitrole and has determined that the benefits from continued use of amitrole outweigh the risks. Accordingly, the Agency is proposing to terminate the Special Review.

B. Legal Background

In order to obtain a registration for a pesticide under FIFRA, an applicant must demonstrate that the pesticide satisfies the statutory standard for registration. The standard requires, among other things, that the pesticide will not cause "unreasonable adverse effects on the environment" [FIFRA section 3(c)(5)]. The term "unreasonable adverse effects on the environment" means "any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide" [FIFRA section 2(bb)]. This standard requires a finding that the benefits of each use of the pesticide outweigh the risks of such use, when the pesticide is used in compliance with the terms and conditions of registration and in accordance with commonly recognized practices.

The burden of proving that a pesticide satisfies the statutory standard is on the proponents of registration and continues as long as the registration remains in effect. Under FIFRA section 6, the Administrator may cancel the registration of a pesticide or require modification of the terms and conditions of a registration if he determines that the pesticide product causes unreasonable adverse effects to man or the environment. EPA created the Special Review process to facilitate the identification of pesticide uses which may not satisfy the statutory standard for registration and to provide a public procedure to gather and evaluate information about the risks and benefits of these uses.

A Special Review may be initiated if a pesticide meets or exceeds the risk criteria set out in the regulations at 40 CFR part 154. EPA announces that a Special Review is initiated by publishing a Position Document (PD) in the **Federal Register**. After a PD is issued, registrants and other interested persons are invited to review the data upon which the review is based and to submit data and information to rebut EPA's conclusions by showing that EPA's initial determination was in error, or by

showing that use of the pesticide is not likely to result in unreasonable adverse effects on human health or the environment. In addition to submitting rebuttal evidence, commenters may submit relevant information to aid in the determination of whether the economic, social and environmental benefits of the use of the pesticide outweigh the risks. After reviewing the comments received and other relevant materials obtained during the Special Review process, EPA makes a decision on the future status of registrations of the pesticide.

The Special Review process may be concluded in various ways depending upon the outcome of EPA's risk/benefit assessment. If EPA concludes that all of its risk concerns have been adequately rebutted, the pesticide registration will be maintained unchanged. If, however, all risk concerns are not rebutted, EPA will proceed to a full risk/benefit assessment. In determining whether the use of a pesticide poses risks which are greater than the benefits, EPA considers possible changes to the terms and conditions of registration which can reduce risks to the level where the benefits outweigh the risks, and it may require that such changes be made in the terms and conditions of the registration. Alternatively, EPA may determine that no changes in the terms and conditions of a registration will adequately assure that use of the pesticide will not cause any unreasonable adverse effects. If EPA makes such a determination, it may seek cancellation, suspension, or change in classification of the pesticide's registration. This determination would be set forth in a Notice of Final Determination issued in accordance with 40 CFR 154.33.

Issuance of this Notice means that the Agency has assessed the potential adverse effects associated with the uses of amitrole and has preliminarily determined that the benefits override the risks.

C. Regulatory Background

The Registration Standard for amitrole was published on March 30, 1984. It required submission of product chemistry, environmental fate, toxicology and ecological effects data.

On May 15, 1984, the EPA issued a notice to initiate a Special Review based on carcinogenic concerns to mixers, loaders and applicators for registrations of products containing amitrole (49 FR 20546). This document, also referred to as Position Document 1 or PD 1, detailed the basis for the Agency's decision to initiate a Special Review. At that time, the Agency determined that all uses, including the homeowner use, would be the subject of the Special Review for amitrole. Subsequently, all products designated for homeowner use were canceled [Ref. 2], and the ensuing Special Review focused on the carcinogenic risk to mixers, loaders and applicators. The Agency had reviewed data concerning the potential adverse effects associated with uses of amitrole which indicated that amitrole induces thyroid and pituitary tumors in the rat, plus liver and thyroid tumors in mice, and had determined that pesticide products containing amitrole met or exceeded the risk criterion in 40 CFR 162.11(a)(3)(ii)(A), (1984 volume). That section required that a Special Review shall be initiated if a pesticide "induces oncogenic effects in experimental mammalian species or in man as a result of oral, inhalation or dermal exposure." That criterion is mirrored by the current provision of 40 CFR 154.7(a)(2), (1991 volume), which sets forth the similar criterion for initiation of a Special Review by EPA.

II. Summary of Toxicological Concerns and Agency Evaluation ofComments

The Special Review of amitrole was initiated in 1984 because of data indicating that amitrole induces thyroid, pituitary and liver tumors in laboratory animals. In addition, the Agency required further information to be submitted regarding amitrole's other potential effects [Ref. 1]. This section summarizes the Agency's review of studies for all effects of concern and includes discussion of new information and public comments that have been received since publication of the PD 1.

A. Carcinogenicity

In the PD 1, the Agency indicated its concern about the carcinogenic effects of amitrole. In making its current determination, EPA reviewed nine long-term carcinogenicity studies conducted with amitrole on rats, mice or hamsters. One of the rat studies is a chronic inhalation study; the rest of the studies (4 rat, 3 mouse and 1 hamster) are oral feeding, gavage or drinking water studies [Refs. 3 through 12]. None of these studies individually satisfied EPA testing guidelines; some had major deficiencies (e.g., target doses grossly exceeded [Ref. 3]; problems with the histological examination and presentation of data [Ref. 4]). The rat inhalation study and one of the rat oral studies were classified as invalid. In addition, one perinatal carcinogenicity study in mice could not be evaluated. The chronic feeding study in hamsters was not addressed by the Agency because the hamster was determined to be the least sensitive species. The rest of the studies are classified as supplementary; that is, the studies are scientifically valid, but do not satisfy all Agency guideline requirements. These five studies are discussed below, and do indicate that amitrole is likely to be a carcinogen, inducing thyroid and pituitary tumors in rats, and thyroid and liver tumors in mice. They are considered part of the weight-of-evidence determination for the carcinogenic potential of amitrole. Following these studies are discussions of other pertinent information which support the carcinogenic potential of amitrole.

1. *Rat studies— a. Keller; Hazleton, 1959.* Amitrole was administered in the diet at 0, 10, 50 or 100 ppm to Charworth Farm rats and was associated with numerical increases, in both sexes at the terminal sacrifice, in the incidence of thyroid adenoma at 50 ppm and 100 ppm and in combined thyroid adenoma/carcinoma at 100 ppm. There were statistically significant positive trends for thyroid adenomas and for combined adenoma/carcinoma in both sexes. There were also statistically significant positive trends in thyroid hyperplasia in both sexes at 68 weeks, which were not seen at 104 weeks.

b. *Johnson; Food and Drug Research, 1981.* Amitrole was administered in the diet in five "pulsed" dose groups (A, 0–0; B, 5–100; C, 1–20; D, 3–60; E, 10–200 ppm) to Fischer 344 rats. In treatment groups B, D and E, statistically significant increases in the incidence of thyroid follicular cell adenoma and combined adenoma/carcinoma were reported in both sexes. There were also statistically significant positive trends for adenoma and carcinoma, both individually and combined, in both sexes. In both sexes, there were both statistically significant increases in the incidence of follicular cell hyperplasia in all treatment groups, and also statistically significant positive trends. Increases in thyroid organ weights were observed for groups B and E, both sexes. Thyroid hormone T3 was elevated throughout the study for all treatment groups compared to controls, while T4 values were variable.

c. *Steinhoff, 1979, 1983.* Amitrole was administered in the diet at 0, 1, 10 or 100 ppm to Wistar rats and was associated with statistically significant increases in the incidence of thyroid tumors at 100 ppm in males and females when compared to the controls, as well as a statistically significant positive trend in both sexes. There was a numerical increase in the incidence of pituitary tumors in both sexes in all treatment groups, which was statistically significant in both sexes at 100 ppm.

with a statistically significant positive trend for females. Percentage accumulations of radioiodine were increased in both sexes at 100 ppm at "the majority of the test times", which was thought to be due to increases in physiologically active thyroid tissue; proportional plasma iodine remained fairly constant throughout the study.

2. *Mouse studies*— a. *Innes, 1969.* Amitrole was administered by stomach tube at 6,667 ppm and by dietary feeding at 2,192 ppm. In this study, amitrole was used as a positive control for screening 120 compounds to C57 mice. Results indicated carcinoma of the thyroid in 64 of 72 treated animals and hepatomas in 67 of 72 animals.

b. *Steinhoff, 1979, 1983.* Amitrole was administered in the diet to NMRI mice at 0, 1, 10 or 100 ppm and was associated with statistically significant positive trends for hepatocellular carcinoma and combined liver carcinoma/adenoma in females. Thyroid weights were increased throughout the study in both sexes at 100 ppm.

3. *Mutagenicity.* Although the published literature shows that amitrole is negative in a majority of mutagenicity assays [Ref. 13], there is some evidence that amitrole may have some genotoxic activity, as well as transformation activity in mammalian tests. Two sister chromatid exchange assays were reported positive; there were mixed results for DNA damage and unscheduled DNA synthesis, and all in vitro cell transformation assays were positive.

In addition, several studies suggest that amitrole has mutagenic activity when assayed with metabolic activation systems other than the usual liver preparations (e.g. "S9" mixes) [Ref. 14]. Also, Daston et. al. [Ref. 15] found that mutations were induced by amitrole in the mouse lymphoma assay supplemented with a prostaglandin H synthase activation system. Further, Krause and Eling [Ref. 16] have shown PHS- and lactoperoxidase-mediated binding of labelled amitrole to protein and nucleic acid (tRNA), as well as protein binding catalyzed by microsomal thyroid peroxidases; this demonstrates that amitrole can be activated to a reactive species.

Therefore, the data suggest that evidence of amitrole's possible genotoxicity may play a role in its carcinogenic potential. However, this is not an established conclusion, and the exact role genotoxicity has for amitrole-induced thyroid tumors is unclear at this time.

4. *Mechanism of tumor formation (Threshold Concept).* Amitrole is a potent antithyroid agent in laboratory animals, causing thyroid tumors in rats and mice. A plausible theory for amitrole-induced thyroid tumor development is supported by the threshold concept, discussed below. While the Agency recognizes that this concept provides a possible mechanism for thyroid tumor evolution, it has not been proven.

Experimental evidence indicates that thyroid tumors in rats can only occur as a result of exceeding a threshold (i.e., tumors appear only when hormone concentrations are altered above or below a specific level, identified as the threshold, for an extended period of time). To fully understand the threshold concept, it is necessary to provide a brief explanation of the physiological relationship between the pituitary gland and thyroid gland. Decreased levels of thyroid hormones disturb the physiological equilibrium which causes the anterior pituitary gland to secrete thyroid stimulating hormone (TSH). In turn, TSH causes thyroid hormone levels to rise back to normal levels. The anterior pituitary then decreases production of TSH which causes a subsequent decrease in the production of thyroid hormone. If there is a disruption of this feedback mechanism resulting in decreased thyroid hormone levels that cannot be counterbalanced by increased TSH production, the result is the continuous but futile stimulation of the thyroid by TSH. This constant stimulation by TSH over an extended period of time changes the morphology of the thyroid gland and, at some critical point, results in tumor formation. This is the proposed mechanism for tumor formation involving a threshold. It is unclear what role the genotoxicity of amitrole may play in this process.

Amitrole may interfere with the synthesis of thyroid hormones by inhibiting iodide peroxidase, which results in positive feedback to the pituitary (described above) for as long as amitrole exposure is sufficient to maintain decreased thyroid levels. It has been argued, therefore, that unless exposure levels of amitrole are high enough to sufficiently inhibit iodide peroxidase for an extended period of time, causing the appropriate hormone levels to exceed a specific concentration, thyroid tumors should not be induced. In other words, doses of amitrole below the threshold would be inadequate to cause this exaggerated positive feedback.

5. *Structure-Activity.* Amitrole is a heterocyclic aromatic amine, with a structure somewhat similar to a few triazoles that have been shown to induce liver tumors in mice. Other heterocyclic aromatic amines, for instance, some bicyclo- and tricyclo-heterocyclic aromatic amines, have been shown to be very potent carcinogens and mutagens. Also, some homocyclic aromatic amines (those with double rings attached by a simple ether-like bridge), show a correlation between anti-thyroid activity (inhibition of thyroid peroxidase) and thyroid carcinogenesis. Because the structure of amitrole is remotely related to those of other tumor-inducing aromatic amines, it has been determined that there is a weak structure activity relationship.

6. *Classification of carcinogenic potential.* Based on the weight-of-evidence provided collectively by the five studies discussed in this document, amitrole is considered to be a probable human carcinogen. Evidence is considered to be sufficient if there is an increased incidence of tumors: (a) In multiple species or strains of test animals; or (b) in multiple experiments, for example, with different dose levels or routes of administration; or (c) to an unusual degree in a single experiment with regard to high incidence, unusual site or type of tumor, or early age of onset. Although it was generally agreed within the Agency that none of the individual studies were good. However, it was evident that malignant and benign tumors were observed in both sexes of multiple strains of the rat (thyroid) [Refs. 4, 5 and 8] and in two strains of mice (liver) [Refs. 7 and 10]. Other data supporting the conclusion of likely carcinogenic potential include the limited evidence of genotoxicity for amitrole, the structure-activity correlations based on the triazoles (mouse liver tumors), and the slight relationship to heterocyclic aromatic amines.

7. *Potency factor (Q_1*).* For the purposes of risk characterization, the low dose extrapolation multi-stage model using the thyroid tumor data in the rat was chosen. None of the mouse liver data were amenable to quantification and, furthermore, the rat seemed to be the more sensitive species as tumors occurred at lower doses. Therefore, the amitrole Q_1^*, which is the geometric mean of estimates computed separately for male and female rats, was determined to be 1.13 $(mg/kg/day)^{-1}$ [Ref. 17].

B. Developmental and Reproductive Effects

Studies on rabbits, rats, and mice were conducted to assess the potential for amitrole to induce developmental effects [Refs. 18, 19, 20 and 21]. In all three species, amitrole is a developmental toxicant at dose levels

that are maternally toxic. The rabbit is the most sensitive species. In a gavage study in rabbits, dose levels of 0, 4, 40 and 400 mg/kg/day were tested. Developmental and maternal toxicity were observed at 40 mg/kg/day and higher. Maternal effects included loss of body weight, reduced gravid uterine weight, increased relative liver weight (400 mg/kg/day) and increased number of abortions and total litter resorptions, fewer viable implants per litter, blood on the paperboard and yellow/brown fluid in the amniotic sacs (40 and 400 mg/kg/day). The No Observed Effect Level (NOEL) for maternal toxicity was 4.0 mg/kg/day. Developmental effects included decreased fetal body weights and cleft palate (400 mg/kg/day) and increased numbers of early and late resorptions, malformed fore- and hindlimbs, dome-shaped head, hydrocephaly, lateral scoliosis, curved nasal bones, displaced thalamus and poorly ossified bones in skull, trunk and extremities (40 and 400 mg/kg/day). The developmental NOEL was 4.0 mg/kg/day.

A dermal developmental study also was conducted in rabbits. Again, in this study, amitrole is a developmental toxicant at levels which are maternally toxic. Rabbits were dosed over 10 percent of the body surface with 1,000, 1,500, or 2,000 mg/kg/day of amitrole during days 7 through 19 of gestation. The NOEL for maternal toxicity was 1,000 mg/kg/day and the Lowest Observed Effect Level (LOEL) was 1,500 mg/kg/day based on decreased body weights on gestation day 20, decreased food consumption from gestation days 10 through 20 and ascites. The NOEL for developmental toxicity was 1,000 mg/kg/day and the LOEL was 1,500 mg/kg/day based on decreased gravid uterine weights, decreased fetal bodyweights, increased number of total resorptions and increased skeletal anomalies including unossified hyoid (skull), unossified pubis, absent and/or unossified talus, and left carotid arising from innominate artery.

A 2-generation rat reproduction study was not required by the Agency because, based on current use patterns of amitrole, no reproductive risk to workers was expected. However, the Agency has received a 2-generation reproduction study (determined to be supplementary) [Ref. 22], in which Sherman rats were fed 0, 25 or 50 mg/kg amitrole in the diet for 55 days and then mated. Decreases in body weights and food consumption, enlarged thyroids and reduced liver and kidney weights were observed in the parents of both treated groups. The number of offspring, mean body weights and survival were reduced in the offspring of both treated groups. No malformations were reported. Because this study does not meet Agency guidelines, a determination on the validity of the noted reproductive effects could not be made.

The Agency has received a range-finding reproduction study [Ref. 23] in which rats were tested at dose levels of 40, 100, 300 and 800 ppm in the diet. There was maternal toxicity at all dose levels (decreased maternal body weight gains from gestation days 0–7 at 100 ppm and above, and goiter and increased thyroid-to-body weight ratios at 40 ppm and above). The mean number of pups was significantly lower at dose levels of 100 ppm and above, and decreases in T4 were seen in F1 males at 40 ppm, and in both sexes at 100 ppm and above. TSH was increased at 100 ppm and at 300 ppm. Increased thyroid weights, hyperplastic goiter and follicular hyperplasia also were observed in the offspring.

C. Public Comments and Agency Responses To The Position Document 1

A number of comments relating to the toxicity of amitrole were received in response to the PD 1. A summary of those comments and the Agency's responses follow.

1. *Comment.* Amitrole is a secondary, not a primary, thyroid and pituitary carcinogen in laboratory animals.

Response. The Agency believes that while the data in the rat are suggestive of a disruption in the thyroid-pituitary status, the data are neither clear and complete nor consistent. Therefore, the Agency treats amitrole as a primary carcinogen for the thyroid and pituitary. The Agency also believes that amitrole is a primary carcinogen for the liver.

2. *Comment.* It is inappropriate to extrapolate thyroid and pituitary carcinogenic effects in laboratory animals to humans.

Response. The Agency takes the position that humans are at least as sensitive as laboratory animals unless data are developed to establish and quantify any differences in sensitivity.

3. *Comment.* Exposure to amitrole must be of sufficient magnitude and duration to elicit thyroid, pituitary, and liver carcinogenic effects.

Response. The Agency believes that exposure to low doses of amitrole can elicit thyroid and pituitary carcinogenic effects. Thyroid tumors were observed in long-term rat studies at doses as low as 60 ppm in the diet. There are some data that indicate that amitrole may induce an increase in liver tumors in mice at low dose levels as well. The Agency agrees that exposure to amitrole must be prolonged to elicit thyroid and pituitary carcinogenic effects. The Agency believes that extended and continuing exposure is necessary to initiate the liver carcinogenic process.

4. *Comment.* Amitrole has no mutagenic potential.

Response. The Agency believes that while a large number of mutagenicity studies are negative (many of them from studies in bacteria), there are a number of studies with positive results (see Hill et al., 1989). In addition, several studies suggest that amitrole has mutagenic activity when assayed with metabolic activation systems other than the usual liver preparations; for example, "S9" mixes. (See Mutagenicity, Unit II. A. 3. of this notice) Overall, the genotoxicity evidence for amitrole from available tests is not entirely negative and there are indications of genotoxic, as well as transformation, activity in mammalian tests.

5. *Comment.* The appropriate model to estimate thyroid and pituitary carcinogenic risk is a non-linear model, not the multi-stage model.

Response. The Agency believes that while the data in the rat were suggestive of a disruption in the thyroid-pituitary status, the data were neither clear and complete nor consistent, and did not support the use of the threshold model. Therefore, for the purpose of risk characterization, a low dose extrapolation multi-stage model has been used for quantification of human risk.

6. *Comment.* The Agency inappropriately used modeling to estimate risk from exposure to amitrole.

Response. The Agency believes that the application of modeling techniques to estimate risk is appropriate for thyroid and pituitary carcinogenic effects. The Agency believes that the data are insufficient to support the use of a NOEL/uncertainty factor methodology for estimation of risk.

III. Occupational and Residential Exposure and Risk and Agency Evaluation of Comments

A. Position Document 1

In the May 1984 Notice of Special Review (PD 1), the Agency concluded that, except for uses associated with homeowner products, the carcinogenic risk associated with all use patterns and application techniques of amitrole may result in unreasonable adverse effects. The Agency's risk analysis was based on exposure estimates obtained from surrogate studies employing other pesticides with uses and application

techniques similar to amitrole, and one exposure study which utilized amitrole.

When conducting the risk assessment, the Agency assumed that all workers were unprotected; that is, they wore only cotton work clothes, short-sleeved shirts but no hat, gloves or respirator. Fifteen percent of the body surface was assumed to be uncovered. Applicator exposure was calculated from surrogate data where amitrole exposure was determined to be a linear function of the pounds of amitrole active ingredient expected to be used vs. the pounds of applied surrogate active ingredient. When no data were available, applicator exposure was calculated as a function of the duration of application and the concentration of the active ingredient in the spray. Mixer/loader exposures were estimated from surrogate data and were assumed to be proportional to the amount of amitrole active ingredient vs. the amount of surrogate active ingredient. Highway tractor (or truck) applicators and forest helicopter applicators were assumed to be tended by mixer/loader personnel. Except for applicators using home-use pressurized aerosols, all other applicators were assumed to be involved in mixing/loading operations. The Agency's assumptions were conservative and may have overestimated actual exposure.

The Agency estimated the exposure for each application technique and each site type on which amitrole was registered. These sites included: rights-of-way, marshes and drainage ditches, ornamentals, and land surrounding commercial, industrial, agricultural, domestic, and recreational premises. The typical exposure was based on average field worker exposure, while minimum and maximum values were based on the highest and lowest exposures observed in the data. Dermal exposure, especially to the hands, constituted virtually all of the total amitrole exposure. Exposure estimates ranged from 1×10^{-1} mg/kg/day for certain industrial uses to 3×10^{-7} mg/kg/day for homeowner uses. The use of protective clothing (coveralls, gloves, hats and boots) was expected to reduce the dermal exposure.

At the time of the PD 1, there were no data available to estimate the dermal penetration of amitrole. Since dermal exposure was the greatest single source of exposure to workers, this was an important parameter in assessing exposure and therefore risk. Because of the lack of data, the Agency calculated the risk to workers using two assumptions. First, EPA assumed that 100 percent of amitrole would be absorbed, a worst case assumption. Risk estimates under this assumption ranged from 10^{-6} to 10^{-5} for homeowners to 10^{-2} to 10^{-1} for utility power wagon applicators, industry power wagon applicators, industry knapsack/hand-carry applicators, railroad tanktrain mixer/loaders and highway tractor/truck mixer/loaders. Second, EPA also assumed 0.1 percent dermal absorption, based on the chemical properties of amitrole. Based on this assumption, the risk estimates ranged from 10^{-9} to 10^{-8} for homeowners to 10^{-4} to 10^{-3} for utility power wagon mixer/loader/applicators, and industry power wagon mixer/loader/applicators.

B. Current Exposure and Risk Estimates

1. *Label, packaging, and use changes.* Rhone-Poulenc, the sole U.S. registrant of amitrole, has voluntarily canceled all homeowner products (55 FR 41763, October 15, 1990), and has voluntarily taken actions which have reduced worker exposure to amitrole. These actions include deleting the high exposure application methods, such as knapsack sprayers, which had previously resulted in the highest risk. Rhone-Poulenc also adopted a "no-glug" container to reduce splashing while pouring, added protective clothing requirements to product labels and canceled all uses except on rights-of-way, public utilities, nurseries, and land surrounding commercial, industrial and farm premises. The current risk assessment for amitrole is for workers mixing, loading and applying amitrole to highway rights-of-way, the use with the greatest exposure and, therefore, risk.

2. *Current exposure estimates and assumptions.* The current assessment is based on worker exposure studies conducted for bromoxynil [Ref. 17], another herbicide. The Agency used the bromoxynil worker exposure study as a surrogate for the liquid formulations of amitrole because: (1) The container design for amitrole was amended so it is similar to that of bromoxynil; (2) the label restrictions for protective clothing and engineering controls for amitrole are comparable in effectiveness to those for bromoxynil; (3) the application equipment used to apply amitrole to rights-of-way is similar to that used for bromoxynil; and (4) the ground boom equipment used for bromoxynil agricultural sites would likely result in similar or greater exposure as compared to equipment used for amitrole on highway rights-of-way.

In general, the exposure assessment assumed that workers wore clean cotton (or cloth) coveralls over long sleeve shirts and long pants in addition to boots or sturdy footwear. For workers handling concentrated product (mixer/loaders) or when repairing and cleaning the equipment used with this product, chemical resistant gloves were also assumed to be used. These protective clothing requirements are on the current labels.

Usage data utilized for this assessment indicate that the typical usage per person on highway rights-of-way is 100 lbs active ingredient (ai) per day and 1,000 lbs ai/year. The typical application rate is assumed to be 2.5 lbs ai/acre and 40 acres are treated per day. A typical worker is assumed to weigh 70 kg.

Based on these assumptions, the total yearly exposure to liquid formulations for a 70 kg worker is 2.2×10^{-2} mg/kg/year. The average daily exposure is 5.9×10^{-5} mg/kg/day. The Agency believes that the exposure from the water soluble packets will be far less than the exposure incurred by mixer/loaders from the liquid formulation. Exposures of applicators to mixtures from either liquid or wettable powder formulations are assumed to be the same. Therefore, the exposure estimate of 5.9×10^{-5} mg/kg/day for the liquid is judged to be the highest exposure estimate for all amitrole formulations.

3. *Current risk estimates*— a. *Carcinogenic risk.* The availability of the bromoxynil exposure studies and the dermal penetration study has allowed EPA to refine its risk estimates. In the PD 1, in the absence of a valid study to demonstrate otherwise, dermal penetration was assumed to be 100 percent. A dermal penetration study on amitrole was subsequently received and reviewed, and was used in the current risk assessment. Dermal penetration in this study was shown to be 0.1 percent [Ref. 24]. Additionally, EPA estimates that the unit cancer risk (Q_1^*) is 1.13 $(mg/kg/day)^{-1}$.

When calculating the Lifetime Average Daily Dose (LADD), EPA assumed a worker life span of 70 years with an amitrole exposure period of over 35 years. Using these values, and an average daily exposure estimate of 5.9×10^{-5} mg/kg/day, the LADD was determined to be 2.9×10^{-5} mg/kg/day.

The excess lifetime cancer risk to workers involved in mixing, loading, and application of the liquid formulations of amitrole for highway rights-of-way uses is estimated to be 3.3×10^{-6} [Ref. 17].

b. *Other risks.* Three developmental studies, two oral and one dermal, are available for amitrole. Because the primary route of exposure is dermal, the most appropriate study to assess potential developmental effects to workers exposed to amitrole is the

dermal study. Using the NOEL of 1,000 mg/kg/day from this study to calculate margins of exposure, EPA determined that workers would not be at risk for developmental effects from exposure to amitrole.

C. Public Comments and Agency Responses to the Position Document 1

Comments relating to exposure to amitrole were received in response to the PD 1. A summary of those comments and the Agency's responses follow.

1. *Comment.* The worker exposure estimates used for the Registration Standard and the Position Document 1 in 1984 are unrealistic and represent a worst case exposure scenario.

Response. The Agency acknowledges that, in the absence of more specific available data, its 1984 worker exposure estimates were conservative and represented a worst case scenario. Both the Registration Standard and the PD 1 specifically state that calculations may overestimate exposure. Since 1984, the Agency has received better data that allow a more accurate estimate of exposure and risk. The Agency originally assumed 100 percent dermal penetration; actual data generated in 1985 by the registrant showed the dermal penetration to be 0.1 percent. Additionally, exposure data from a bromoxynil study were used as a surrogate for amitrole, which allowed the Agency to more accurately estimate exposure to mixers/loaders/applicators.

2. *Comment.* The amitrole exposure study [Ref. 25] demonstrated that hands received only 6 percent of the total dermal exposure. Lower legs, chest and thighs received 94 percent of the total exposure. Respiratory exposure was insignificant (less than 0.1 percent of the total exposure).

Response. The Agency disagrees with this and estimates hand exposure at approximately 96 percent. The estimate in Baugher (1982) was based on an application time of 2.36 hours with applicators using latex gloves. The actual application time was 7 hours with applicators wearing cotton gloves that absorb and retain moisture, with latex gloves worn underneath. The Agency noted that the exposure estimate was based on the residue on the outside of the latex gloves. The forearms, chest, and inhalation account for the balance of exposure. The Agency concurs that inhalation represents less than 0.1 percent of the total exposure.

3. *Comment.* Normal exposure will not alter thyroid function of workers.

Response. The Agency concurs that typical mixing/loading/application practices of certified applicators coupled with protective clothing and the exposure reduction measures will reduce exposure to levels which will not likely alter worker thyroid function.

IV. Summary of Benefits and Evaluation of Alternatives

A. Importance of Amitrole

Benefits of amitrole include its relatively low cost, broad spectrum control of newly emerged or established broadleafs and its miscibility with other low cost, broad spectrum residual soil active chemicals. Amitrole controls newly emerged or established broadleafs because it is a contact herbicide that kills growing vegetation. Amitrole is mixed with residual herbicides because its short 2–4 week half-life precludes effectiveness against later-germinating weeds. Amitrole provides nonselective weed control when used alone or in combination with longer lasting herbicides on highway berms, guard rails, around sign posts, railroad beds, and similar areas. Highway rights-of-way sometimes require total vegetation control which is generally achieved through use of nonselective herbicides such as amitrole in tank mix combination with a soil residual herbicide.

B. Usage of Amitrole

Amitrole is imported, not produced in the United States. Rhone-Poulenc is the only U.S. importer of amitrole. Domestic usage has been falling throughout the 1980's and 1990's, partially due to the 1984 classification of amitrole as a Restricted Use pesticide. The decline in use of amitrole may also be due to the recent registration of other herbicides with a broader spectrum of weed control. The EPA estimated that annual usage of amitrole in 1984 was between 500,000 and 800,000 pounds but, by 1989, had decreased to between 50,000 and 100,000 pounds of active ingredient. Total annual usage of amitrole declined even further in 1990 to between 40,000 and 60,000 pounds active ingredient. It is estimated that 80 to 90 percent of amitrole use is for highway rights-of-way. The remaining usage is divided among many minor uses which include landscape management, industrial areas and recreational areas. In the late 1970's, amitrole was used widely on railroad, highway and utility rights-of-way, but currently, its major use is along highways [Ref. 26].

According to the registrant, voluntary cancellation in 1991 of its California registration was due to its estimates that the projected sales volume of amitrole did not justify expenditures needed to comply with California data requirements [Ref. 27]. The registrant estimated at the time of cancellation that 90 percent of the pesticide's market share existed in that state. Concurrently, Rhone-Poulenc requested from the Agency, and was granted, a 2–year existing stocks provision to allow products currently in channels of trade to be distributed and sold in California until May 1993. It is expected that the voluntary cancellation in California will accelerate the current declining trend in usage of amitrole.

C. Alternatives Assessment

Amitrole rights-of-way alternatives are divided into two classes: chemical and mechanical control.

1. *Chemical control.* The major alternatives to amitrole are glyphosate, sulfometuron-methyl, diuron, imazapyr, and hexazinone [Ref. 28]. EPA has classified glyphosate as an E carcinogen; that is, evidence indicates that glyphosate is not carcinogenic in humans. Sulfometuron-methyl has not been assigned a carcinogenic classification, but may pose developmental risks. Many of the alternatives to amitrole have outstanding data requirements, thus a satisfactory comparison of the risks for all of the alternatives has not be completed by the Agency. However, glyphosate, at present, appears to be less toxic to humans than amitrole or its alternatives.

Alternatives to amitrole are generally more expensive, and the loss of amitrole from the market could result in increased cost of weed control. Amitrole alternatives provide equivalent, or in some cases, better control of certain weeds with the exception of poison ivy control, for which amitrole is the most efficacious herbicide. If the most likely alternatives, glyphosate and sulfometuron-methyl, were substituted for amitrole, there would be a chemical cost increase ranging from $12.02 to $40.34 per acre treated [Ref 27].

An estimated 30,000 to 50,000 acres of rights-of-way in the United States are currently treated with amitrole. Total chemical cost of maintaining rights-of-way in the United States is estimated to be $224 million per year [Ref. 29]. If glyphosate or sulfometuron-methyl were substituted for amitrole, the aggregated chemical cost increase may range from $600,000 for glyphosate to a chemical cost increase of $2 million for sulfometuron-methyl. Thus, although the other chemical alternatives offer similar control (except for poison ivy), the cost per acre is significantly higher.

2. *Mechanical control.* Controlling brush on highway rights-of-way by manual or mechanical cutting and

controlled burning are high cost alternatives, especially at sites along guardrails and steep slopes, the precise areas of herbicide use.

V. Risk/Benefit Analysis

A. Summary of Risk

EPA has evaluated the risk posed by amitrole to workers mixing, loading and applying the pesticide to highway rights-of-way. Although amitrole is registered for several additional sites, this use pattern is the one that poses the greatest exposure, and therefore risk. EPA has estimated the excess lifetime cancer risk from this exposure to amitrole to be 3.3 x 10^{-5}.

B. Summary of Benefits

Amitrole is a relatively inexpensive and efficacious broad-spectrum herbicide. If amitrole were unavailable, growers would have to use more expensive alternatives (e.g. glyphosate, sulfometuron-methyl) as substitutes, with costs increasing from $600,000 to $2 million/year. Also, many of these alternatives may not provide as effective control of certain weeds as amitrole.

C. Cost-Effectiveness

A cost-effectiveness analysis was developed by the Agency comparing amitrole and its two main alternatives, glyphosate and sulfometuron-methyl [Ref. 30]. The cost-effectiveness analysis reflected two scenarios that took under consideration three possible occupational exposure levels. The first scenario gave a point estimate for 250 applicators (an estimate provided by the registrant as the total annual number of workers exposed, before cancellation in California) and the second scenario utilized 100 applicators (an EPA estimate of the total number of exposed workers, before cancellation in California). The analysis also considered three scenarios for length of exposure: 1 year, 5 years and 35 years. Typically, 1 year of exposure represents college students who are exposed to amitrole only during summer work programs. Five years represents the applicator who finds different employment after several years. Thirty-five years depicts the applicator who is employed in the same profession throughout a lifetime. The exposure figure of 35 years was used for calculating the present risk assessment. This resulted in an estimated risk of 3.3 x 10^{-5}. However, the Agency believes that its assumption that worker exposure occurs for 35 years is conservative and tends to overestimate typical exposure. A more likely length of exposure for a typical worker is considered to be 5 years; the risk estimate for amitrole based on 5 years of exposure is calculated to be 5 x 10^{-6}.

For all scenarios, the upper end of the treated acreage was used in defining the low and high cost per cancer case avoided, if amitrole was canceled and replaced by one of the two principal alternatives. The cost-effectiveness estimate under the scenario of 250 applicators for a 35 year exposure period would range from $73 million to $244 million per cancer case avoided. The risk resulting from 5 years of exposure, the more likely scenario, would increase these costs associated with avoiding an extra cancer case.

D. Conclusions

Based on its risk and benefits assessment, the Agency has concluded that the benefits provided from the use of amitrole outweigh the risks. The cost-effectiveness analysis supports this conclusion by demonstrating the extremely high costs of avoiding a cancer case that would be incurred with cancellation of amitrole.

VI. Agency's Decision Regarding Special Review

Because EPA has concluded that the risks of amitrole are outweighed by the benefits of continued use, EPA proposes that the Special Review based on potential carcinogenic risk of amitrole to workers be concluded. Use of bromoxynil data as a surrogate for amitrole data and the data on dermal penetration have enabled the Agency to refine the amitrole risk assessment to be more realistic than the worst-case assessment conducted for the PD 1. The label modifications and risk reduction measures taken by the registrant, Rhone-Poulenc, have significantly reduced worker exposure to amitrole. Consequently, there is a corresponding reduction in the risks posed by the remaining uses of amitrole. Even given the differences in risk between amitrole and its most likely alternatives, EPA believes that the 3.3 x 10^{-5} risk associated with 35 years of exposure to amitrole is outweighed by the benefits of use. The Agency believes that amitrole's remaining uses pose no significant threat to workers or the general public, and that its significantly lower costs and higher efficacy rates as compared to its alternatives merit retention of the remaining uses. However, because of the positive carcinogenicity studies, the Agency will continue to require that amitrole remain a Restricted Use pesticide, that the cancer warning statement remain in place, that the current application method remain limited to boom sprayers and that present protective clothing requirements remain on labelling.

VII. Public Comment Opportunity

During the 30–day comment period, specific comments are solicited on the preliminary determination set forth in this Notice. The Agency will review and consider any comments received during the official comment period before issuing the final determination to conclude the Special Review of amitrole. Interested persons are invited to submit written comments on this proposal to conclude the Special Review of pesticide products which contain amitrole. All comments and information should be submitted in triplicate by [Insert date 30 days after date of publication in the **Federal Register**] to the address given in this Notice under the ADDRESS section. The comments and information must bear the document control number, "OPP–30000/38A; FRL 4164–1." All written comments filed pursuant to this notice, except "CBI", will be available for public inspection in Rm. 1132, Crystal Mall #2, 1921 Jefferson Davis Highway, Arlington, VA. 22202, from 9 a.m. to 4 p.m., Monday through Friday, excluding legal holidays.

VIII. References

(1) U.S. Environmental Protection Agency (USEPA). Amitrole Pesticide Registration Standard and Guidance Document. March 30, 1984.

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(17) Schlosser, A. Memorandum to Philip Poli (USEPA). Assessment of Risk to Workers from Exposure to Amitrole Used on Highway Rights-Of-Way. April 24, 1991.

(18) Percutaneous Teratology (Developmental Toxicity via Dermal Route of Administration). Study No. HLA 6224–107. Unpublished report prepared by Hazleton Laboratories America submitted by Rhone-Poulenc Ag Company. (1988).

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(26) Jennings, Allen. Memorandum to Rick Tinsworth (USEPA). Preliminary Benefit Analysis of Amitrole. January 18, 1990.

(27) Griffin, Karen. Memorandum to Special Review Team (USEPA). Summary of 1991 Amitrole Use, Usage, and General Benefits. July 1991.

(28) Esworthy, Robert. Memorandum to Philip Poli (USEPA). Amitrole Alternatives. January 3, 1992.

(29) Saulmon, J.G. Memorandum to Philip Poli (USEPA). EPA Estimate of Range of Dollar Costs of Maintaining Rights-of-Way in the USA. December 3, 1991.

(30) Griffin, Karen. Memorandum to Philip Poli (USEPA). Cost Effectiveness/Benefit Analysis for Amitrole. February 6, 1992.

All but the published references concerning this Preliminary Determination on amitrole are available for inspection from 8 a.m. to 4 p.m., Monday through Friday, except legal holidays, in the Public Response and Program Resources Branch, Field Operations Division (H7506C), Office of Pesticide Programs, Environmental Protection Agency, Room 1128, Crystal Mall #2, 1921 Jefferson Davis Highway, Arlington, VA 22202.

Dated: September 30, 1992.

Victor J. Kimm,

Acting Assistant Administrator for Prevention, Pesticides and Toxic Substances.

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federal register

Thursday
October 8, 1992

Part V

Environmental Protection Agency

40 CFR Part 721

Significant New Uses of Certain Chemical Substances; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 721

[OPPTS-50598; FRL-3934-7]

RIN 2070-AB27

Significant New Uses of Certain Chemical Substances

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is promulgating significant new use rules (SNURs) under section 5(a)(2) of the Toxic Substances Control Act (TSCA) for 24 chemical substances which were the subject of premanufacture notices (PMNs) submitted to EPA. Today's action requires certain persons who intend to manufacture, import, or process these substances for a significant new use to notify EPA at least 90 days before commencing the manufacturing or processing of the substance for a use designated by this SNUR as a significant new use. The required notice will provide EPA with the opportunity to evaluate the intended use, and if necessary, to prohibit or limit that activity before it occurs. EPA is promulgating this SNUR using direct final procedures.

EFFECTIVE DATE: The effective date of this rule is December 7, 1992. This rule shall be promulgated for purposes of judicial review at 1 p.m. Eastern Standard Time on October 22, 1992. If EPA receives notice before November 9, 1992 that someone wishes to submit adverse or critical comments on EPA's action in establishing a SNUR for one or more of the chemical substances subject to this rule, EPA will withdraw the SNUR for the substance for which the notice of intent to comment is received and will issue a proposed SNUR providing a 30-day period for public comment.

ADDRESSES: Each comment or notice of intent to submit adverse or critical comment must bear the docket control number OPPTS-50598 and the name(s) of the chemical substance(s) subject to the comment. Since some comments may contain confidential business information (CBI), all comments should be sent in triplicate (with additional sanitized copies if confidential business information is involved) to: TSCA Document Receipt Office (TS-790), Office of Pollution Prevention and Toxics, Environmental Protection Agency, rm. E-105, 401 M St., SW., Washington, DC 20460. Nonconfidential versions of comments on this rule will be placed in the rulemaking record and will be available for public inspection. Unit IX. of this preamble contains additional information on submitting comments containing CBI.

FOR FURTHER INFORMATION CONTACT: Susan B. Hazen, Director, Environmental Assistance Division (TS-799), Office of Pollution Prevention and Toxics, Environmental Protection Agency, rm. E-543-B, 401 M St., SW., Washington, DC 20460, Telephone: (202) 554-1404, TDD: (202) 554-0551.

SUPPLEMENTARY INFORMATION: This SNUR will require persons to notify EPA at least 90 days before commencing manufacturing or processing of a substance for any activity designated by this SNUR as a significant new use. The supporting rationale and background to this rule are more fully set out in the preamble to EPA's first direct final SNURs at 55 FR 17376 on April 24, 1990. Consult that preamble for further information on the objectives, rationale, and procedures for the rules and on the basis for significant new use designations including provisions for developing test data.

I. Authority

Section 5(a)(2) of TSCA (15 U.S.C. 2604(a)(2)) authorizes EPA to determine that a use of a chemical substance is a "significant new use." EPA must make this determination by rule after considering all relevant factors, including those listed in section 5(a)(2). Once EPA determines that a use of a chemical substance is a significant new use, section 5(a)(1)(B) of TSCA requires persons to submit a notice to EPA at least 90 days before they manufacture, import, or process the substance for that use. The mechanism for reporting under this requirement is established under 40 CFR 721.10.

II. Applicability of General Provisions

General provisions for SNURs appear under subpart A of 40 CFR part 721. These provisions describe persons subject to the rule, recordkeeping requirements, exemptions to reporting requirements, and applicability of the rule to uses occurring before the effective date of the final rule. Rules on user fees appear at 40 CFR part 700. Persons subject to this SNUR must comply with the same notice requirements and EPA regulatory procedures as submitters of PMNs under section 5(a)(1)(A) of TSCA. In particular, these requirements include the information submission requirements of section 5(b) and 5(d)(1), the exemptions authorized by section 5(h)(1), (2), (3), and (5), and the regulations at 40 CFR part 720. Once EPA receives a SNUR notice, EPA may take regulatory action under section 5(e), 5(f), 6, or 7 to control the activities for which it has received the SNUR notice. If EPA does not take action, EPA is required under section 5(g) to explain in the **Federal Register** its reasons for not taking action.

Persons who intend to export a substance identified in a proposed or final SNUR are subject to the export notification provisions of TSCA section 12(b). The regulations that interpret section 12(b) appear at 40 CFR part 707. Persons who intend to import a chemical substance identified in a final SNUR are subject to the TSCA section 13 import certification requirements, which are codified at 19 CFR 12.118 through 12.127 and 127.28. Such persons must certify that they are in compliance with the SNUR requirements. The EPA policy in support of the import certification appears at 40 CFR part 707.

III. Substances Subject to This Rule

EPA is establishing significant new use and recordkeeping requirements for the following chemical substances under 40 CFR part 721 subpart E. In this unit, EPA provides a brief description for each substance, including its PMN number, chemical name (generic name if the specific name is claimed as CBI), CAS number (if assigned), basis for the action taken by EPA (including the statutory citation and specific finding), toxicity concern, and the CFR citation assigned in the regulatory text section of this rule. The specificuses which are designated as significant new uses are cited in the regulatory text section of the rule by reference to 40 CFR part 721 subpart B where the significant new uses are described in detail.

Data on potential exposures or releases of the substances, testing other than that specified for the substances, or studies on analogous substances, which may demonstrate that the significant new uses being reported do not present an unreasonable risk, may be included with significant new use notification. In addition, this unit describes tests that are recommended by EPA to provide sufficient information to evaluate the substance. Descriptions of recommended tests are provided for informational purposes.

PMN Numbers P-88-2100 and P-88-2169

Chemical name: (generic) Acrylamide, polymers with tetraalkyl ammonium salt and polyalkyl, amino alkyl methacrylamide salt.

CAS numbers: Not available.

Basis for action: The PMN substances will be used as water clarifiers. Test

data on structurally similar polycationic compounds indicate that the PMN substances may cause toxicity to aquatic organisms. Based on this data EPA expects toxicity to aquatic organisms to occur at a concentration of 2 ppb of the PMN substances in surface waters. EPA determined that use of the substances as water clarifiers as described in the PMNs did not present an unreasonable risk because the substances would not be released to surface waters. EPA has determined that potential uses, such as water retention aids, other types of clarifiers or flocculents could result in releases to surface waters where the concentration of the PMN substances exceeds 2 ppb. Based on this information, the PMN substances meet the concern criteria at 721.170(b)(4)(ii).

Recommended testing: The Agency has determined that the results of the following acute aquatic toxicity testing would help characterize possible environmental effects of the substances: Algal (40 CFR 797.1050); daphnid (40 CFR 797.1300); fish (40 CFR 797.1400); and fish toxicity mitigated by dissolved organic carbon (40 CFR 795.115). These tests should be conducted with flow-through conditions and measured concentrations.

CFR citation: 40 CFR 721.6540.

PMN Number P-90-2

Chemical name: (generic) Disubstituted phenoxazine, chlorometalate salt.

CAS number: Not available.

Basis for action: The use of the PMN substance as described in the PMN was claimed confidential. Test data on substances similar in structure to the PMN substance and an analogous chemical substance indicate that the PMN substance may cause mutagenicity and oncogenicity. EPA determined that use of the substance as described in the PMN did not present an unreasonable risk to human health. EPA has determined that potential other uses such as a dye could result in risk to human health. Based on this information the PMN substance meets the concern criteria at 721.170(b)(1)(i)(D).

Recommended testing: The Agency has determined that the results of a 2-year rodent bioassay (40 CFR 798.3300) would help characterize possible human health effects of the PMN substance.

CFR citation: 40 CFR 721.4720.

PMN Numbers P-90-1984 and P-90-1985

Chemical name: (generic) Fatty acid polyamine condensate, phosphoric acid ester salt.

CAS numbers: Not available.

Basis for action: The PMN substances will be used as steel corrosion inhibitors. Test data on structurally similar ditallowimidazoline esters indicate that the PMN substances may cause toxicity to aquatic organisms. Based on this data EPA expects toxicity to aquatic organisms to occur at a concentration of 1 ppb of the PMN substances in surface waters. EPA determined that use of the substances, as described in the PMN, did not present an unreasonable risk because the substances would not be released to surface waters. EPA has determined that potential use as a fabric softener could result in releases to surface waters where the concentration of the PMN substances could be greater than 1 ppb. Based on this information the PMN substances meet the concern criteria at § 721.170 (b)(4)(ii).

Recommended testing: The Agency has determined that the results of the following acute aquatic toxicity testing would help characterize possible environmental effects of the substance: Algal (40 CFR 797.1050); daphnid (40 CFR 797.1300); and fish (40 CFR 797.1400). These tests should be conducted with flow-through conditions and measured concentrations.

CFR citation: 40 CFR 721.6200.

PMN Number P-91-87

Chemical name: (generic) Fatty amide.

CAS number: Not available.

Basis for action: The PMN substance will be used as an asphalt additive. Based on calculations of the physical and chemical properties of the substance, the quantitative structure activity relationship (QSAR) of the PMN substance indicates that the PMN substance may cause toxicity to aquatic organisms. Based on these data EPA is concerned that toxicity to aquatic organisms may occur at a concentration as low as 1 ppb of the PMN substance in surface waters. EPA determined that use of the substance as described in the PMN did not present an unreasonable risk because the substance would not be released to water. EPA has determined that other uses of the substance may result in releases to surface waters greater than 1 ppb. Based on this information the PMN substance meets the concern criteria at § 721.170(b)(4)(iii).

Recommended testing: EPA has determined that an acute algal assay (40 CFR 797.1050), an acute daphnid assay (40 CFR 797.1300), and an acute fish assay (40 CFR 797.1400) will characterize environmental effects.

CFR citation: 40 CFR 721.3720.

PMN Number P-91-101

Chemical name: 2-Imino-1,3-thiazin-4-one-5,6-dihydromonohydrochloride.

CAS number: Not available.

Basis for action: Test data on structurally similar chemical substances indicate that the PMN substance may cause toxicity to aquatic organisms. Based on this data EPA expects toxicity to aquatic organisms to occur at a concentration of 30 ppb of the PMN substance in surface waters. The PMN submitter intends to import the PMN substance and therefore no releases from domestic manufacture will occur. However, EPA has determined that domestic manufacture could result in releases to surface waters where the concentration of the PMN substance would be greater than 30 ppb. Based on this information the PMN substance meets the concern criteria at § 721.170(b)(4)(ii). In addition, based on test data on structurally similar chemical substances, P-91-101 may be developmentally toxic to humans. EPA has determined that import, processing, and use of the PMN substance as a liquid for the use as described in the PMN does not pose a significant risk to workers. However, EPA predicts inhalation exposures to the PMN substance as a solid or a powder form may cause significant risk to workers. Based on this information the PMN substance meets the concern criteria at § 721.170(b)(3)(ii).

Recommended testing: The Agency has determined that the results of the following acute aquatic toxicity testing would help characterize possible environmental effects of the substance: Algal (40 CFR 797.1050); daphnid (40 CFR 797.1300); and fish (40 CFR 797.1400). The daphnid and fish tests should be conducted with flow-through conditions and measured concentrations. The algal study should be conducted with static conditions and measured concentrations. In addition, the Agency has determined that the results of a two-species developmental toxicity test (40 CFR 798.4900) would help characterize possible human health effects of the substance.

CFR citation: 40 CFR 721.4480.

PMN Number P-91-102

Chemical name: (generic) Amidinodithiopropionic acid hydrochloride.

CAS number: Not available.

Basis for action: Test data on structurally similar chemical substances indicate that the PMN substance may cause toxicity to aquatic organisms. Based on these data EPA expects

toxicity to aquatic organisms to occur at a concentration of 30 ppb of the PMN substance in surface waters. The PMN submitter intends to import the PMN substance and therefore no releases from domestic manufacture will occur. However, EPA has determined that domestic manufacture could result in releases to surface waters where the concentration of the PMN substance would be greater than 30 ppb. Based on this information the PMN substance meets the concern criteria at § 721.170(b)(4)(ii).
Recommended testing: The Agency has determined that the results of the following acute aquatic toxicity testing would help characterize possible environmental effects of the substance: Algal (40 CFR 797.1050); daphnid (40 CFR 797.1300); and fish (40 CFR 797.1400). The daphnid and fish tests should be conducted with flow-through conditions and measured concentrations. The algal study should be conducted with static condiditons and measured concentrations.
CFR citation: 40 CFR 721.4460.

PMN Number P-91-118

Chemical name: (generic) Oligomeric silicic acid ester compound with an hydroxylalkylamine.
CAS number: Not available.
Basis for action: The PMN substance will be used as a binder for paints. Test data on structurally similar alkoxysilanes indicate that the PMN substance may cause lung toxicity. Based on these data EPA expects toxicity to exposed workers to occur if they are exposed by inhalation. EPA determined that use of the substance as a binder for paints as described in the PMN did not present an unreasonable risk because the substance would be processed and used in enclosed processes eliminating potential inhalation exposures. EPA has determined that other potential uses may result in inhalation exposures from nonenclosed processes. Based on this information the PMN substance meets the concern criteria at § 721.170(b)(3)(ii).
Recommended testing: The Agency has determined that the results of a 90-day subchronic inhalation study in rats (40 CFR 798.2250) would characterize potential health effects of the substance.
CFR citation: 40 CFR 721.3100.

PMN Number P-91-288

Chemical name: (generic) Alkoxylated dialkyldiethylenetriamine, alkyl sulfate salt.
CAS number: Not available.
Basis for action: The PMN substance will be used as a cellulose softener. Test data on structurally similar substances indicate that the PMN substance may cause toxicity to aquatic organisms. Based on these data EPA is concerned that toxicity to aquatic organisms may occur at a concentrations as low as 5 ppb of the PMN substance in surface waters. EPA determined that use of the substance as described in the PMN did not present an unreasonable risk because the substance would not be released to water during manufacturing. EPA has determined that other manufacturing processes may result in releases to surface waters greater than 5 ppb. Based on this information the PMN substance meets the concern criteria at § 721.170(b)(4)(ii).
Recommended testing: EPA has determined that an acute algal assay (40 CFR 797.1050), an acute daphnid assay (40 CFR 797.1300), and an acute fish assay (40 CFR 797.1400) conducted under static nominal conditions will characterize environmental effects.
CFR citation: 40 CFR 721.2420.

PMN Number P-91-328

Chemical name: (generic) Disubstituted phenylazo trisubstituted naphthalene.
CAS number: Not available.
Basis for action: The PMN substance was submitted for use as a chemical intermediate. Absorption of the PMN substance is not expected through the skin, expected to be poor through the GI tract, but is expected through the lungs. Test data on a structurally similar substance indicates that an azo reduced naphthalene product of the PMN substance may cause carcinogenicity and mutagenicity. Based on this information, the PMN substance meets the concern criteria at § 721.170(b)(1)(i)(D). This action is being taken because of human health concerns regarding toxicity from exposure to the PMN substance via inhalation. Although EPA does not expect inhalation exposure to manufacturing or processing workers or other targeted populations during the use identified in the PMN submission, if the use or physical form of the PMN substance were to change the inhalation exposure to workers could increase significantly. Therefore, the SNUR will require submission of a notice to EPA at least 90 days before the PMN substance may be used other than as an intermediate, or in a powder form, or in a way that generates a dust.
Recommended testing: The Agency has determined that the results of an in vitro rat hepatocyte primary culture/DNA repair test (unscheduled DNA synthesis UDS assay) on the PMN substance and naphthalene containing azo reduction product, with β-naphthylamine as a concurrent positive control, may help address the health concerns.
CFR citation: 40 CFR 721.5200.

PMN Number P-91-442

Chemical name: (generic) Ethylene oxide adduct of fatty acid ester with pentaerythritol.
CAS number: Not available.
Basis for action: The PMN substance will be used as an intermediate for the production of a disperse dye carrier for finishing polyester fibers. Test data on structurally similar nonionic surfactants indicate that the PMN substance may cause toxicity to aquatic organisms. Based on these data EPA expects toxicity to aquatic organisms to occur at a concentration of 10 ppb of the PMN substance in surface waters. EPA determined that use of the substance as an intermediate for the production of a disperse dye carrier for finishing polyester fibers did not present an unreasonable risk because the substance would not be released to surface waters. EPA has determined that other potential uses, as well as potential domestic manufacture, could result in releases to surface waters where the concentration of the PMN substance could be greater than 10 ppb. Based on this information the PMN substance meets the concern criteria at § 721.170(b)(4)(ii).
Recommended testing: The Agency has determined that the results of the following aquatic toxicity tests would help characterize possible environmental effects of the substance: Algal (40 CFR 797.1050); daphnid (40 CFR 797.1300); and fish (40 CFR 797.1400) acute tests. These tests should be conducted with flow-through conditions and measured concentrations.
CFR citation: 40 CFR 721.3680.

PMN Number P-91-487

Chemical name: (generic) Substituted phenylimino carbamate derivative.
CAS number: Not available.
Basis for action: The PMN substance will be used as a coloring agent. Test data on structurally similar substances indicate that the PMN substance may cause toxicity to aquatic organisms. Based on these data EPA is concerned that toxicity to aquatic organisms may occur at a concentrations as low as 7 ppb of the PMN substance in surface waters. EPA determined that use of the substance as described in the PMN did not present an unreasonable risk because the substance is imported and would not be released to water during manufacturing. EPA has determined that if the substance is manufactured in the United States releases to surface waters may result. Based on this information

the PMN substance meets the concern criteria at § 721.170(b)(4)(ii).
Recommended testing: EPA has determined that an acute algal assay (40 CFR 797.1050), an acute daphnid assay (40 CFR 797.1300), and an acute fish assay (40 CFR 797.1400) conducted under static nominal conditions will characterize environmental effects.
CFR citation: 40 CFR 721.2025.

PMN Number P-91-490

Chemical name: (generic) Substituted ethanolamine.
CAS number: Not available.
Basis for action: The PMN substance will be used as a chemical intermediate. Test data on structurally similar anionic polymers indicate that the PMN substance may cause toxicity to aquatic organisms. Based on these data EPA is concerned that toxicity to aquatic organisms may occur at concentrations as low as 1 ppb of the PMN substance in surface waters. EPA determined that use of the substance as a chemical intermediate as described in the PMN did not present an unreasonable risk because releases of the substance would not result in surface water concentrations exceeding the environmental concern level. Test data on a structurally similar chemical also indicate that the PMN substance may cause liver toxicity and cataracts. Based on these data EPA expects liver toxicity and cataract formation in workers exposed by inhalation. EPA determined that use of the substance in a liquid form as described in the PMN did not present an unreasonable risk because workers would not be exposed by inhalation. EPA has determined that other potential uses may result in releases to surface waters where the concentration of the PMN substance could be greater than 1 ppb or where workers could be exposed by inhalation. Based on this information the PMN substance meets the concern criteria at § 721.170(b)(4)(ii) and (b)(3)(ii).
Recommended testing: EPA has determined that a 21-day daphnid chronic test (40 CFR 797.1330) and a 28-day fish early life stage test (40 CFR 797.1600) would help characterize possible environmental effects of the substance. EPA has also determined that a 90-day subchronic oral study in rats (40 CFR 797.2650) would help characterize possible health effects of the substance.
CFR citation: 40 CFR 721.3360.

PMN Number P-91-521

Chemical name: (generic) Acrylic acid, polymer with substituted ethene.
CAS number: Not available.
Basis for action: The PMN substance will be used as a surface finishing agent. Test data on structurally similar anionic polymers indicate that the PMN substance may cause toxicity to aquatic organisms. Based on these data EPA expects toxicity to aquatic organisms to occur at a concentration of 200 ppb of the PMN substance in surface waters. EPA determined that use of the substance as a surface finishing agent as described in the PMN did not present an unreasonable risk because releases of the substance would not result in surface water concentrations exceeding the environmental concern level. EPA has determined that other potential uses may result in releases to surface waters where the concentration of the PMN substance could be greater than 200 ppb. Based on this information the PMN substance meets the concern criteria at § 721.170(b)(4)(ii).
Recommended testing: The Agency has determined that the results of the following toxicity testing would help characterize possible environmental effects of the substance: Acute algal (40 CFR 797.1050) and acute algal in hard medium where the PMN substance contains equivalent calcium.
CFR citation: 40 CFR 721.6560.

PMN Number P-91-584

Chemical name: (generic) Aryl sulfonate of a fatty acid mixture, polyamine condensate.
CAS number: Not available.
Basis for action: The PMN substance will be used as a corrosion inhibitor. Test data on structurally similar substances indicate that the PMN substance may cause toxicity to aquatic organisms. Based on these data EPA is concerned that toxicity to aquatic organisms may occur at concentrations as low as 1 ppb of the PMN substance in surface waters. EPA determined that use of the substance as a corrosion inhibitor as described in the PMN did not present an unreasonable risk because the substance would not be released to water. EPA has determined that other potential uses may result in releases to surface waters greater than 1 ppb. Based on this information the PMN substance meets the concern criteria at § 721.170(b)(4)(ii).
Recommended testing: EPA has determined that an acute algal assay (40 CFR 797.1050), an acute daphnid assay (40 CFR 797.1300), and an acute fish assay (40 CFR 797.1400) conducted under static nominal conditions will characterize environmental effects.
CFR citation: 40 CFR 721.6220.

PMN Number P-91-710

Chemical name: (generic) Alkyl substituted diaromatic hydrocarbons.
CAS number: Not available.
Basis for action: The PMN substances will be used as industrial chemicals. Based on calculations of the physical and chemical properties, the QSAR of the PMN substances indicate that they may cause toxicity to aquatic organisms. Based on these data, EPA is concerned that toxicity to aquatic organisms may occur at a concentration as low as 1 ppb of the PMN substances in surface waters. EPA determined that use of the substances as described in the PMN did not present an unreasonable risk because the substances would not be released to water. EPA has determined that other uses of the substances may result in releases to surface waters greater than 1 ppb. Based on this information the PMN substances meets the concern criteria at § 721.170(b)(4)(iii).
Recommended testing: EPA has determined that the results of a chronic 60-day early life stage toxicity test in rainbow trout (40 CFR 797.1600), a 21-day chronic daphnid toxicity test (40 CFR 797.1330), and a 96-hr bioassay in algae (40 CFR 797.1050) would help characterize possible environmental effects of the substance.
CFR citation: 40 CFR 721.840.

PMN Number P-91-838

Chemical name: (generic) Salt of cyclodiamine and mineral acid.
CAS number: Not available.
Basis for action: The PMN substance will be used as a hardener for epoxide resins. Based on analogy of the PMN substance to aliphatic amines, the PMN substance may cause toxicity to aquatic organisms. Based on these data EPA is concerned that toxicity to aquatic organisms may occur at a concentration as low as 90 ppb of the PMN substance in surface waters. EPA determined that use of the substance as described in the PMN did not present an unreasonable risk because the substance would not be released to water during manufacturing because the substance would not be manufactured in the United States. EPA has determined that releases of the substance to surface water greater than 90 ppb may occur if the substance is manufactured in the United States. Based on this information the PMN substance meets the concern criteria at § 721.170 (b)(4)(ii).
Recommended testing: EPA has determined that an acute algal assay (40 CFR 797.1050), an acute daphnid assay (40 CFR 797.1300), and an acute fish

assay (40 CFR 797.1400) will characterize environmental effects.
CFR citation: 40 CFR 721.2175.

PMN Number P-91-934

Chemical name: (generic) 2,2'-[(1-Methylethylidene)bis[4,1-phenyloxy[1-(butoxymethyl)-(2,1-ethanediyl]oxymethylene]]bisoxirane, reaction product with a diamine.
CAS number: Not available.
Basis for action: The PMN substance will be used as a hardener for various epoxy systems. Based on analogy of the PMN substance to aliphatic amines, the PMN substance may cause toxicity to aquatic organisms. Based on these data EPA is concerned that toxicity to aquatic organisms may occur at a concentration as low as 2 ppb of the PMN substance in surface waters. EPA determined that use of the substance as described in the PMN did not present an unreasonable risk to aquatic organisms because the substance would not be released to water. EPA has determined that releases to surface waters greater than 2 ppb may result if the substance is used in marine paints. Based on this information the PMN substance meets the concern criteria at § 721.170 (b)(4)(ii).
Recommended testing: EPA has determined that an acute algal assay (40 CFR 797.1050), an acute daphnid assay (40 CFR 797.1300), and an acute fish assay (40 CFR 797.1400) will characterize environmental effects.
CFR citation: 40 CFR 721.5050.

PMN Number P-91-1243

Chemical name: (generic) Substituted cyclohexyldiamino ethyl ester.
CAS number: Not available.
Basis for action: The PMN substance will be used as an industrial chemical. Based on the analogy of the PMN substance to aliphatic amines, the PMN substance may cause toxicity to aquatic organisms. Based on these data EPA is concerned that toxicity to aquatic organisms may occur at a concentration as low as 1 ppb of the PMN substance in surface waters. EPA determined that use of the substance as described in the PMN did not present an unreasonable risk because the substance would not be released to water. EPA has determined that other uses of the substance may result in releases to surface waters greater than 1 ppb. Based on this information the PMN substance meets the concern criteria at § 721.170(b)(4)(ii).
Recommended testing: EPA has determined that an acute algal assay (40 CFR 797.1050), an acute daphnid assay (40 CFR 797.1300), an acute fish assay (40 CFR 797.1400), and an acute fish assay (40 CFR 797.1400) modified with humic acid will characterize environmental effects.
CFR citation: 40 CFR 721.2980.

PMN Number P-92-131

Chemical name: (generic) Cyclic amide.
CAS number: Not available.
Basis for action: The PMN substance will be used as solvent. Based on the analogy of the PMN substance to neutral organic chemicals, the PMN substance may cause toxicity to aquatic organisms. Based on these data EPA is concerned that toxicity to aquatic organisms may occur at a concentration as low as 70 ppb of the PMN substance in surface waters. EPA determined that use of the substance as described in the PMN did not present an unreasonable risk because the substance would not released to surface waters at concentrations above 70 ppb. EPA has determined that other uses of the substance may result in releases to surface water above 70 ppb. Based on this information the PMN substance meets the concern criteria at § 721.170(b)(4)(ii).
Recommended testing: EPA has determined that an acute algal assay (40 CFR 797.1050) will characterize the environmental effects of the PMN substance.
CFR citation: 40 CFR 721.2120.

PMN Number P-92-294

Chemical name: (generic) Diphenylmethane diisocyanate (MDI) modified.
CAS number: Not available.
Basis for action: The PMN substance will be used as a reactive component for structural article formation. Based on the known toxicity of analogous substances, the PMN substance may cause respiratory sensitization and other lung effects if inhaled. EPA determined that use of the substance as described in the PMN did not present an unreasonable risk because the substance would not be inhaled. EPA has determined that other uses of the substance may result in inhalation exposures. Based on this information the PMN substance meets the concern criteria at § 721.170(b)(3)(ii).
Recommended testing: EPA has determined that a respiratory sensitization test (Karol et al., 1983 *Toxicology and Applied Pharmocology*, 68:229–241) and a dermal sensitization test in guinea pigs (40 CFR 798.4100) will characterize the sensitization effects of the PMN substance and that a 90-day subchronic toxicity test via the inhalation route (40 CFR 798.2450) will characterize other pulmonary effects of the PMN substance.
CFR citation: 40 CFR 721.2540.

PMN Number P-92-445

Chemical name: (generic) Fatty acid amine condensate, polycarboxylic acid salts.
CAS number: Not available.
Basis for action: The PMN substance will be used as a corrosion inhibitor. Based on the analogy of the PMN substance to aliphatic amines, the PMN substance may cause toxicity to aquatic organisms. Based on these data EPA is concerned that toxicity to aquatic organisms may occur at a concentration as low as 4 ppb of the PMN substance in surface waters. EPA determined that use of the substance as described in the PMN did not present an unreasonable risk because the substance would not be released to water. EPA has determined that other uses of the substance may result in releases to surface waters greater than 4 ppb. Based on this information the PMN substance meets the concern criteria at § 721.170 (b)(4)(ii).
Recommended testing: EPA has determined that an acute algal assay (40 CFR 797.1050), an acute daphnid assay (40 CFR 797.1300), an acute fish assay (40 CFR 797.1400), and an acute fish assay (40 CFR 797.1400) modified with humic acid will characterize the environmental effects of the PMN substance.
CFR citation: 40 CFR 721.3620.

PMN Number P-92-446

Chemical name: (generic) Coco acid triamine condensate, polycarboxylic acid salts.
CAS number: Not available.
Basis for action: The PMN substance will be used as a corrosion inhibitor. Based on the analogy of the PMN substance to aliphatic amines, the PMN substance may cause toxicity to aquatic organisms. Based on these data EPA is concerned that toxicity to aquatic organisms may occur at a concentration as low as 4 ppb of the PMN substance in surface waters. EPA determined that use of the substance as described in the PMN did not present an unreasonable risk because the substance would not be released to water. EPA has determined that other uses of the substance may result in releases to surface water greater than 4 ppb. Based on this information the PMN substance meets the concern criteria at § 721.170(b)(4)(ii).
Recommended testing: EPA has determined that an acute algal assay (40 CFR 797.1050), an acute daphnid assay (40 CFR 797.1300), an acute fish assay (40 CFR 797.1400), and an acute fish assay (40 CFR 797.1400) modified with humic acid will characterize the

environmental effects of the PMN substance.
CFR citation: 40 CFR 721.2086.

IV. Objectives and Rationale of the Rule

During review of the PMNs submitted for the 24 chemical substances that are subject to this SNUR, EPA determined that one or more of the criteria of concern established at § 721.170 were met.

EPA is issuing this SNUR for specific chemical substances which have undergone premanufacture review to ensure the following objectives: That EPA will receive notice of any company's intent to manufacture, import, or process a listed chemical substance for a significant new use before that activity begins; that EPA will have an opportunity to review and evaluate data submitted in a SNUR notice before the notice submitter begins manufacturing, importing, or processing a listed chemical substance for a significant new use; that, when necessary to prevent unreasonable risks, EPA will be able to regulate prospective manufacturers, importers, or processors of a listed chemical substance before a significant new use of that substance occurs; and that all manufacturers, importers, and processors of the same chemical substance are subject to similar requirements. Issuance of a final effective SNUR for a chemical substance does not signify that the substance is contained on the TSCA Inventory. Manufacturers, importers, and processors are responsible for ensuring that a new chemical substance subject to a final SNUR is contained on the TSCA Inventory.

V. Direct Final Procedure

EPA is issuing these SNURs as direct final rules, as described in § 721.160(c)(3) and 721.170(d)(4). In accordance with § 721.160(c)(3)(ii), this rule will be effective [insert date 60 days after date of publication in the **Federal Register**], unless EPA receives a written notice by [insert date 30 days after date of publication in the **Federal Register**] that someone wishes to make adverse or critical comments on EPA's action. If EPA receives such a notice, EPA will publish a notice to withdraw the direct final SNUR(s) for the specific substance(s) to which the adverse or critical comments apply. EPA will then propose a SNUR for the specific substance(s) providing a 30–day comment period.

This action establishes SNURs for 24 chemical substances. Any person who submits a notice of intent to submit adverse or critical comments must identify the substance and the new use to which it applies. EPA will not withdraw a SNUR for a substance not identified in a notice.

VI. Test Data and Other Information

EPA recognizes that section 5 of TSCA does not require developing any particular test data before submission of a SNUR notice. Persons are required only to submit test data in their possession or control and to describe any other data known to or reasonably ascertainable by them. Unit III. of this preamble lists those recommended tests for informational purposes. The recommended studies may not be the only means of addressing the potential risks of the substance. However, SNUR notices submitted for significant new uses without any test data may increase the likelihood that EPA will take action under section 5(e).

SNUR notice submitters should be aware that EPA will be better able to evaluate SNUR notices which provide detailed information on:

(1) Human exposure and environmental release that may result from the significant new use of the chemical substances.

(2) Potential benefits of the substances.

(3) Information on risks posed by the substances compared to risks posed by potential substitutes.

VII. Applicability of Rule to Uses Occurring Before Effective Date of the Final Rule

To establish a significant "new" use, EPA must determine that the use is not ongoing. The chemical substances subject to this rule have recently undergone premanufacture review. Section 5(e) orders have been issued in 16 cases and notice submitters are prohibited by the section 5(e) orders from undertaking activities which EPA is designating as significant new uses. In cases where EPA has not received a Notice of Commencement (NOC) and the substance has not been added to the Inventory, no other person may commence such activities without first submitting a PMN. For substances for which a NOC has not been submitted at this time, EPA has concluded that the uses are not ongoing. However, EPA recognizes in cases when chemical substances identified in this SNUR are added to the Inventory prior to the effective date of the rule, the substances may be manufactured, imported, or processed by other persons for a significant new use as defined in this rule before the effective date of the rule. However, all of the substances contained in this rule have CBI chemical identities, and since EPA has received a limited number of post-PMN *bona fide* submissions, the Agency believes that it is highly unlikely that many, if any, of the significant new uses described in the following regulatory text are ongoing.

As discussed at 55 FR 17376 (April 24, 1990), EPA has decided that the intent of section 5(a)(1)(B) is best served by designating a use as a significant new use as of this date of publication rather than as of the effective date of the rule. Thus, persons who begin commercial manufacture, import, or processing of the substances regulated through this SNUR will have to cease any such activity before the effective date of this rule. To resume their activities, these persons would have to comply with all applicable SNUR notice requirements and wait until the notice review period, including all extensions, expires. EPA has promulgated provisions to allow persons to comply with this SNUR before the effective date. If a person were to meet the conditions of advance compliance in § 721.45(h) (53 FR 28354, July 17, 1988), the person will be considered to have met the requirements of the final SNUR for those activities. If persons who begin commercial manufacture, import, or processing of the substance between publication and the effective date of the SNUR do not meet the conditions of advance compliance, they must cease that activity before the effective date of the rule. To resume their activities, these persons would have to comply with all applicable SNUR notice requirements and wait until the notice review period, including all extensions, expires.

VIII. Economic Analysis

EPA has evaluated the potential costs of establishing significant new use notice requirements for potential manufacturers, importers, and processors of the chemical substance subject to this rule. EPA's complete economic analysis is available in the public record for this rule (OPPTS–50598).

IX. Rulemaking Record

EPA has established a record for this rulemaking (docket control number OPPTS–50598). The record includes information considered by EPA in developing this rule.

A public version of the record without any confidential business information is available in the TSCA Public Docket Office from 8 a.m. to 12 noon and 1 p.m. to 4 p.m., Monday through Friday, except legal holidays. The TSCA Public Docket Office is located at rm. NE–G004, 401 M St., SW., Washington, DC.

Any person who submits comments claimed as CBI must mark the comments as "confidential", "trade secret", or other appropriate designation. Comments not claimed as confidential at the time of submission will be placed in the public file. Any comments marked as confidential will be treated in accordance with the procedures in 40 CFR part 2. Any person submitting comments claimed to be confidential must prepare and submit a nonconfidential public version in triplicate of the comments that EPA can place in the public file.

X. Regulatory Assessment Requirements

A. Executive Order 12291

Under Executive Order 12291, EPA must judge whether a rule is "major" and therefore requires a Regulatory Impact Analysis. EPA has determined that this rule will not be a "major" rule because it will not have an effect on the economy of $100 million or more, and it will not have a significant effect on competition, costs, or prices. While there is no precise way to calculate the total annual cost of compliance with this rule, EPA estimates that the cost for submitting a significant new use notice range from $4,552 to $12,166, including a $2,500 user fee payable to EPA to offset EPA costs in processing the notice. EPA believes that, because of the nature of the rule and the substances involved, there will be few SNUR notices submitted. Furthermore, while the expense of a notice and the uncertainty of possible EPA regulation may discourage certain innovation, that impact will be limited because such factors are unlikely to discourage an innovation that has high potential value.

This regulation was submitted to the Office of Management and Budget (OMB) for review as required by Executive Order 12291.

B. Regulatory Flexibility Act

Under the Regulatory Flexibility Act (5 U.S.C. 605(b)), EPA has determined that this rule would not have a significant impact on a substantial number of small businesses. EPA has not determined whether parties affected by this rule would likely be small businesses. However, EPA expects to receive few SNUR notices for the substances. Therefore, EPA believes that the number of small businesses affected by this rule will not be substantial, even if all of the SNUR notice submitters were small firms.

C. Paperwork Reduction Act.

The information collection requirements contained in this rule have been approved by OMB under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*), and have been assigned OMB control number 2070–0012.

Public reporting burden for this collection of information is estimated to vary from 30 to 170 hours per response, with an average of 100 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM–223, U.S. Environmental Protection Agency, 401 M St., SW., Washington, DC 20460; and to Office of Management and Budget, Paperwork Reduction Project (2070–0012), Washington, D.C. 20503.

List of Subjects in 40 CFR Part 721

Chemicals, Environmental protection, Hazardous materials, Reporting and recordkeeping requirements, Significant new uses.

Dated: September 17, 1992.

Linda J. Fisher,

Assistant Administrator for Prevention, Pesticides and Toxic Substances.

Therefore, 40 CFR part 721 is amended as follows:

PART 721—[AMENDED]

1. The authority citation for part 721 continues to read as follows:

Authority: 15 U.S.C. 2604, 2607, and 2625(c).

2. By adding new § 721.840 to subpart E to read as follows:

§ 721.840 Alkyl substituted diaromatic hydrocarbons.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified generically as an alkyl substituted diaromatic hydrocarbons (PMN P–91–710) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Release to water.* Requirements as specified in § 721.90(a)(1), (b)(1), and (c)(1).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (k) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

3. By adding new § 721.2025 to subpart E to read as follows:

§ 721.2025 Substituted phenylimino carbamate derivative.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified generically as a substituted phenylimino carbamate derivative (PMN P–91–487) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Release to water.* Requirements as specified in § 721.90(a)(1).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (k) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

4. By adding new § 721.2086 to subpart E to read as follows:

§ 721.2086 Coco acid triamine condensate, polycarboxylic acid salts.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified as coco acid triamine condensate, polycarboxylic acid salts. (PMN P–92–446) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Release to water.* Requirements as specified in § 721.90(a)(1), (b)(1), and (c)(1).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (i) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

5. By adding new § 721.2120 to subpart E to read as follows:

§ 721.2120 Cyclic amide.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified as a cyclic amide (PMN P–92–131) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Release to water.* Requirements as specified in § 721.90(a)(4), (b)(4), and (c)(4) (concentration set at 70 ppb).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (i) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

6. By adding new § 721.2175 to subpart E to read as follows:

§ 721.2175 Salt of cyclodiamine and mineral acid.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified generically as a salt of cyclodiamine and mineral acid (PMN P–91–838) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Industrial, commercial, and consumer activities.* Requirements as specified in § 721.80(f).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (i) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

7. By adding new § 721.2420 to subpart E to read as follows:

§ 721.2420 Alkoxylated dialkyldiethylenetriamine, alkyl sulfate salt.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified generically as an alkoxylated dialkyldiethylenetriamine, alkyl sulfate salt (PMN P–91–288) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Release to water.* Requirements as specified in § 721.90(a)(1).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (k) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

8. By adding new § 721.2540 to subpart E to read as follows:

§ 721.2540 Diphenylmethane diisocyanate (MDI) modified.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified generically as a diphenylmethane diisocyanate (MDI) modified (PMN P–92–294) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Industrial, commercial, and consumer activities.* Requirements as specified in § 721.80(v)(1), (v)(2), (w)(1), (w)(2), (x)(1), (x)(2), (y)(1), and (y)(2).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (i) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

9. By adding new § 721.2980 to subpart E to read as follows:

§ 721.2980 Substituted cyclohexyldiamino ethyl esters.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified generically as substituted cyclohexyldiamino ethyl esters (PMN P–91–1243) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Release to water.* Requirements as specified in § 721.90(a)(1), (b)(1), and (c)(1).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (k) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

10. By adding new § 721.3100 to subpart E to read as follows:

§ 721.3100 Oligomeric silicic acid ester compound with a hydroxylalkylamine.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified generically as oligomeric silicic acid ester compound with a hydroxylalkylamine (PMN P–91–118) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Industrial, commercial, and consumer activities.* Requirements as specified in § 721.80(a).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (i) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

11. By adding new § 721.3360 to subpart E to read as follows:

§ 721.3360 Substituted ethanolamine.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified generically as substituted ethanolamine (PMN P–91–490) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Industrial, commercial, and consumer activities.* Requirements as specified in § 721.80 (v)(1), (v)(2), (w)(1), (w)(2), (x)(1), (x)(2), (y)(1), and (y)(2).

(ii) *Release to water.* Requirements as specified in § 721.90(a)(4), (b)(4), and (c)(4) (N = 1 ppb).

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), (i), and (k) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

12. By adding new § 721.3620 to subpart E to read as follows:

§ 721.3620 Fatty acid amine condensate, polycarboxylic acid salts.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified as a fatty acid amine condensate, polycarboxylic acid salts. (PMN P–92–445) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Release to water.* Requirements as specified in § 721.90(a)(1), (b)(1), and (c)(1).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (i) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

13. By adding new § 721.3680 to subpart E to read as follows:

§ 721.3680 Ethylene oxide adduct of fatty acid ester with pentaerythritol.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified generically as ethylene oxide adduct of fatty acid ester with pentaerythritol (PMN P–91–442) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Release to water.* Requirements as specified in § 721.90(a)(1), (b)(1), and (c)(1).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (k) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

14. By adding new § 721.3720 to subpart E to read as follows:

§ 721.3720 Fatty amide.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified generically as a fatty amide (PMN P–91–87) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Release to water.* Requirements as specified in § 721.90(a)(1), (b)(1), and (c)(1).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (k) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

15. By adding new § 721.4460 to subpart E to read as follows:

§ 721.4460 Amidinothiopropionic acid hydrochloride.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified generically as amidinothiopropionic acid hydrochloride (PMN P–91–102) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Industrial, commercial, and consumer activities.* Requirements as specified in § 721.80(f).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (i) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

16. By adding new § 721.4480 to subpart E to read as follows:

§ 721.4480 2-Imino-1,3-thiazin-4-one-5,6-dihydromonohydrochloride.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified as 2-imino-1,3-thiazin-4-one-5,6-dihydromonohydrochloride (PMN P–91–101) is subject to reporting under this section for the significant new uses

described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Industrial, commercial, and consumer activities.* Requirements as specified in § 721.80(f), (v)(1), (v)(2), (w)(1), (w)(2), (x)(1), and (x)(2).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (i) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

17. By adding new § 721.4720 to subpart E to read as follows:

§ 721.4720 Disubstituted phenoxazine, chlorometalate salt.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified generically as disubstituted phenoxazine, chlorometalate salt (PMN P–90–0002) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Industrial, commercial, and consumer activities.* Requirements as specified in § 721.80(g).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (i) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

18. By adding new § 721.5050 to subpart E to read as follows:

§ 721.5050 2,2'-[(1-Methylethylidene)bis[4,1-phenyloxy[1-(butoxymethyl)-(2,1-ethanediyl]oxymethylene]]bisoxirane, reaction product with a diamine.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified generically as 2,2'-[(1-methylethylidene)bis[4,1-phenyloxy[1-(butoxymethyl)-(2,1-ethanediyl]oxymethylene]]bisoxirane, reaction product with a diamine (PMN P–91–934), is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Release to water.* Requirements as specified in § 721.90(a)(1), (b)(1), and (c)(1).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (k) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

19. By adding new § 721.5200 to subpart E to read as follows:

§ 721.5200 Disubstituted phenylazo trisubstituted naphthalene.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified generically as disubstituted phenylazo trisubstituted naphthalene (PMN P–91–328) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Industrial, commercial, and consumer activities.* Requirements as specified in § 721.80(g), (v)(1), (w)(1), (x)(1), and (y)(2).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified § 721.125(a), (b), (c), and (i) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

20. By adding new § 721.6200 to subpart E to read as follows:

§ 721.6200 Fatty acid polyamine condensate, phosphoric acid ester salts.

(a) *Chemical substances and significant new uses subject to reporting.* (1) The chemical substances identified as fatty acid polyamine condensate, phosphate ester salts (PMNs P–90–1984 and P–90–1985) are subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Release to water.* Requirements as specified in § 721.90(a)(1), (b)(1), and (c)(1).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (k) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

21. By adding new § 721.6220 to subpart E to read as follows:

§ 721.6220 Aryl sulfonate of a fatty acid mixture, polyamine condensate.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified generically as an aryl sulfonate of a fatty acid mixture, polyamine condensate (PMN P–91–584) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Release to water.* Requirements as specified in § 721.90(a)(1), (b)(1), and (c)(1).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (k) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

22. By adding new § 721.6540 to subpart E to read as follows:

§ 721.6540 Acrylamide, polymers with tetraalkyl ammonium salt and polyalkyl, aminoalkyl methacrylamide salt.

(a) *Chemical substances and significant new uses subject to reporting.* (1) The chemical substances identified generically as acrylamide, polymers with tetraalkyl ammonium salt and polyalkyl, amino alkyl methacrylamide salt (PMNs P–88–2100 and P–88–2169) are subject to reporting under this section for the significant new use described in paragraph (a)(2) of this section.

(2) The significant new use is:

(i) *Release to water.* Requirements as specified in § 721.90(a)(1), (b)(1), and (c)(1).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (k) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

(Approved by the Office of Management and Budget under OMB control number 2070–0012)

23. By adding new § 721.6560 to subpart E to read as follows:

§ 721.6560 Acrylic acid, polymer with substituted ethene.

(a) *Chemical substance and significant new uses subject to reporting.* (1) The chemical substance identified generically as acrylic acid, polymer with substituted ethene (PMN P–91–521) is subject to reporting under this section for the significant new uses described in paragraph (a)(2) of this section.

(2) The significant new uses are:

(i) *Release to water.* Requirements as specified in § 721.90(a)(4), (b)(4), and (c)(4) (N = 200 ppb).

(ii) [Reserved]

(b) *Specific requirements.* The provisions of subpart A of this part apply to this section except as modified by this paragraph.

(1) *Recordkeeping requirements.* Requirements as specified in § 721.125(a), (b), (c), and (k) are applicable to manufacturers, importers, and processors of this substance.

(2) *Limitations or revocation of certain notification requirements.* The provisions of § 721.185 apply to this section.

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