review, are not included in the tape. EPA maintains a master inventory file that does contain the complete inventory.

Because of the high cost of printing and distribution, the chemical production information tape will only be available in its computer readable tape format; there will be no microfiche or hard copies available to be distributed to the public. The public may, however, view a hard copy of the chemical information production tape in the public reading areas at EPA headquarters and in the EPA regional offices. The EPA headquarters public reading area is located at: 401 M Street, SW, Washington, DC 20460, Room 447 East Tower. The chemical production information tape (NTIS No. PB–80–155–153; $125) may be obtained by submitting a written request to:

National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161.

However, anyone who has a deposit account with NTIS or an American Express card may call the NTIS Sales Desk (703–557–4650) and place the order by phone.

For a complete understanding of the data contained on this tape, it is necessary to be familiar with the introductory material in the Initial Inventory. Persons who do not have copies of the Initial Inventory and its Supplement are referred to the May 15 and November 9, 1979 Federal Register notices or to the Industry Assistance Office.

Dated: May 21, 1980.

Edwin H. Clark II,

Acting Assistant Administrator for Pesticide and Toxic Substances.

[FR Doc. 80-16072 Filed 5-27-80; 8:45 am]

BILLING CODE 6560-01-M

[FRL 1501-7; OPTS-41002]

Sixth Report of the Interagency Testing Committee to the Administrator, Environmental Protection Agency; Receipt of the Report and Request for Comments Regarding Priority List of Chemicals

AGENCY: Environmental Protection Agency (EPA).

ACTION: This notice requests comments on recent additions to the Interagency Testing Committee's (ITC) priority list of chemical substances recommended for testing under section 4(a) of the Toxic Substances Control Act (TSCA).

SUMMARY: The ITC, established under section 4(e) of TSCA, has transmitted its Sixth Report to the Administrator of EPA. This report revises and updates the Committee's priority list of chemicals. The Report adds one category to the Committee's list of chemicals for priority consideration by EPA in the promulgation of test rules under section 4(a) of the Act.

The Sixth Report is included in this Notice. The Agency invites interested persons to submit comments on the Report.

DATE: Comments should be submitted by June 27, 1980.

FOR FURTHER INFORMATION CONTACT: Steven D. Newburg-Rinn, Assessment Division (TS–792), Rm. E–229, Office of Pesticides and Toxic Substances, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460, (202–426–0503).

SUPPLEMENTARY INFORMATION:

Background

Section 4(a) of TSCA authorizes the Administrator of EPA to promulgate regulations requiring testing of chemical substances in order to develop data relevant to determining the risks that such chemical substances may present to health and the environment.

Section 4(e) of TSCA established an Interagency Testing Committee to make recommendations of chemical substances to the Administrator of EPA for priority consideration for proposing test rules under section 4(a). The Committee may at any one time designate up to 50 of its recommendations for special priority consideration by EPA. Within 12 months of that designation, EPA must initiate rulemaking to require testing or publish in the Federal Register its reasons for not doing so.

The Committee's initial recommendations to the priority list, of four substances and six categories of substances, were published in the Federal Register of October 12, 1977 (42 FR 55026). EPA's response to the initial recommendations appeared in the Federal Register of October 26, 1978 (43 FR 50134). The ITC's revisions to the initial list appeared in the Committee's Second Report and were published in the Federal Register of April 19, 1978 (43 FR 16684). Those revisions were the addition of four substances and four categories of substances to the priority list. EPA responded to the Second ITC Report on May 14, 1979 (44 FR 28095). In its Third Report, published in the Federal Register of October 30, 1978 (43 FR 50631), the Committee recommended the addition of one chemical substance and two categories of chemical substances to the priority list. In its Fourth Report, the Committee recommended the addition of 11 individual chemicals and one category to its priority list, each designated for priority consideration by EPA. The ITC's Fifth Report was received by the Administrator on November 7, 1979. In its Fifth Report, the Committee recommended the addition of two individual chemicals and three categories of chemicals to its priority list, each designated for priority consideration by EPA. The ITC's Sixth Report was received by the Administrator on April 15, 1980.

Availability

The ITC's Sixth Report follows. Request for Comments: EPA invites interested persons to submit comments on the ITC's new recommendations. The Agency requests comments be submitted no later than June 27, 1980. All comments received by that date will be considered by the Agency in determining whether to propose test rules in response to the Committee's new recommendations.

Comments should bear the identifying notation OTS–41002 and should be submitted to the Document Control Officer, Chemical Information Division, Office of Pesticides and Toxic Substances (TS–793), Room 447, East Tower, EPA, 401 M Street, SW, Washington, DC 20460. All written comments will be available for public inspection in Room 447, East Tower, at the same address, between 8:00 a.m. and 4:00 p.m., weekdays.

Dated: May 21, 1980.

Edwin H. Clark II,

Acting Assistant Administrator for Pesticides and Toxic Substances.

Sixth Report of the TSCA Interagency Testing Committee to the Administrator, Environmental Protection Agency

Toxic Substances Control Act Interagency Testing Committee

Member Agencies—Council on Environmental Quality, Department of Commerce, Environmental Protection Agency, National Cancer Institute, National Institute of Environmental Health Sciences, National Institute for Occupational Safety and Health, National Science Foundation, Occupational Safety and Health Administration.

Liaison Agencies—Consumer Product Safety Commission, Department of Defense, Department of the Interior, Food and Drug Administration.

April 9, 1980.

Honorable Douglas M. Costle,
Administrator,
Environmental Protection Agency,
Washington, D.C. 20460

Dear Mr. Costle: I am pleased to present to you the sixth report of the TSCA Interagency Testing Committee. This report meets the

statutory requirement under Section 4(e)(1)(B) of TSCA stipulating that the Committee shall make revisions in the Priority List, as it determines to be necessary, at least every six months. In this sixth report, the Committee chooses to add one category of chemicals to the Priority List.

This report marks the first time that the Committee was able to use the TSCA Chemical Inventory since it became available. Because of certain problems in handling confidential data, the Committee chose to access only the public portion of the Inventory. One of the problems associated with the use of confidential data is the restriction against disclosing such data, even though they may be part of the Committee's rationale for a test recommendation. Under certain circumstances, this problem might be solved by allowing the public disclosure of aggregate data. The Committee would be pleased to meet with EPA officials to discuss this matter.

I would like to take advantage of this opportunity to acknowledge and bring to your attention the commitment required on the part of statutory and liaison Committee members. Since its inception, the Committee has met more than one-hundred times in regular sessions and more times in meetings of subcommittees and other Committee-related groups. It is often necessary for the Committee to meet on almost a weekly basis. Thus, between preparing their assignments and attending meetings, members must commit at least 20–25% of their time to Committee-related activities. I am sure that you would agree that this is a significant commitment in support of EPA, especially when viewed collectively as an interagency collaborative effort.

The Committee hopes that this sixth report is helpful to the EPA in its efforts to control toxic substances.

Sincerely yours,

James M. Sontag, Ph.D.

Chairman.

Sixth Report of the TSCA Interagency Testing Committee to the Administrator, Environmental Protection Agency, April 1980

Contents

Summary

Section 4 of the Toxic Substances Control Act of 1976 (TSCA, Pub. L. 94–469) provides for the testing of chemicals in commerce which may pose an unreasonable risk to human health or the environment. It also provides for the establishment of a Committee, composed of representatives from eight designated Federal agencies, to recommend chemical substances or mixtures to which the Administrator of the U.S. Environmental Protection Agency (EPA) should give priority consideration for the promulgation of testing rules. The Committee makes such revisions in the Section 4(e) Priority List as it determines to be necessary and transmits them to the Administrator.

As a result of its deliberations, the Committee is revising the TCSA Section 4(e) Priority List by the addition of one chemical category. The category is designated as phenylenediamines, as defined in the category identification section of the report (see Section 2.2). Studies recommended are carcinogenicity, mutagenicity, teratogenicity, other toxic effects, epidemiology, and environmental effects. The Committee designates this category for action by EPA within twelve months of the date of this sixth report, as stipulated by TSCA.

TSCA Interagency Testing Committee

Statutory Member Agencies and Representatives

Council on Environmental Quality
No Representative
Department of Commerce
Orville E. Paynter, Member
Bernard Greifer, Alternate
Environmental Protection Agency
Joseph Seifter, Member
Amy Rispin, Alternate
National Cancer Institute
James M. Sontag, Member and Chairman
National Institute of Environmental Health Sciences
Warren T. Piver, Alternate
National Institute for Occupational Safety and Health
Vera W. Hudson, Member and Vice Chairman
Michael Blackwell, Alternate
National Science Foundation
Sidney Draggan, Member
Occupational Safety and Health Administration
Victor Alexander, Member
David Logan, Alternate

Liaison Agencies and Representatives

Consumer Product Safety Commission
Joseph McLaughlin
Department of Defense
Bernard P. McNamara
Department of Interior
Charles R. Walker
Food and Drug Administration
Allen H. Heim and Winston deMonsabert
Department of Agriculture
Homer E. Fairchild and Fred W. Clayton

Committee Staff

Walter G. Rosen, Acting Executive Secretary*

The Committee acknowledges and is grateful for the assistance given to it by John Lyon, EPA Office of General Counsel, and Edward Zillioux, EPA Environmental Review Division.

April 1980

Chapter 1. Introduction

1.1 *Background.* The Interagency Testing Committee (Committee) was established under Section 4(e) of the Toxic Substances Control Act of 1976 (TSCA, Pub. L. 94–469). The specific mandate of the Committee is to identify and recommend to the Administrator of the Environmental Protection Agency (EPA) chemical substances or mixtures in commerce which should be tested to determine their potential hazard to human health and/or the environment. The Act specifies that the Committee's recommendations will be in the form of a Priority List, which is to be published in the Federal Register. The Committee is directed to make revisions to the List, as it determines to be necessary, and to transmit such revisions to the EPA Administrator at least every six months after submission of the initial List.

The Committee is comprised of representatives from eight statutory member agencies and from five liaison agencies. The specific representatives are names in the front of this report. The Committee's chemical review procedures and recommendations are described in earlier reports (see References 1–6).

1.2 *Committee's Activities during this Reporting Period.* The Committee has continued to review chemicals from its second round of scoring (see Reference 2 for methodology). Information now available from the TSCA Public Chemical Inventory is being utilized by the Committee in assessing chemicals. Because of the problems associated, at this time, with the handling of confidential information, the Committee has elected not to avail itself of information in the non-public portion of the Inventory. Thus, when production data on chemicals are given, they may be under estimates to the extent that additional production data are reported as confidential.

1.3 *Consideration of Ongoing Studies.* Because questions arise as to the Committee's treatment of ongoing studies on chemcials under consideration or recommended for

*Terminated his association with the Committee on February 7, 1980.

study, the Committee's position regarding this matter is reiterated below.

"The Committee generally does not regard knowledge that studies are planned or ongoing as a sufficient basis to defer consideration of a substance for designation for the effect under investigation or for any other effect. The Committee's judgment as to whether a substance has been adequately tested for health and environmental effects must rest with the data that are currently available. Such data do not exist for planned studies and may be in various stages of generation for ongoing studies."

The Committee notes that planned and ongoing studies may be a factor in the EPA Administrator's determination as to whether to accept a recommendation.

1.4 *The TSCA Section 4(e) Priority List.* With the addition from this report, 39 entries now appear on the Priority List. The entries and the dates of their designation by the Committee are given in Table 1. It should be noted that the Table varies from the one in the Committee's fifth report in that the dates now represent the time of the Committee's action rather than the date by which action is required by the EPA. The Committee considers each entry to be equal priority.

References

1. Preliminary List of Chemical Substances for Further Evaluation. Toxic Substances Control Act Interagency Testing Committee, July 1977.

2. Initial Report to the Administrator, Environmental Protection Agency, TSCA Interagency Testing Committee, October 1, 1977. Published in the Federal Register, Vo. 42, 197, Wednesday, October 12, 1977, pp. 55026–55080. Corrections published in Federal Register, Vol. 42, November 11, 1977, pp. 58777–58778. The report and supporting dossiers also were published by the Environmental Protection Agency, EPA 560–10–78/001, January 1978.

3. Second Report of the TSCA Interagency Testing Committee to the Administrator, Environmental Protection Agency. TSCA Interagency Testing Committee, April 1978. Published in the Federal Register, Vol. 43, No. 76, Wednesday, April 19, 1978, pp. 16684–16688. The report and supporting dossiers also were published by the Environmental Protection Agency, EPA 560–10–78/002, July 1978.

4. Third Report of the TSCA Interagency Testing Committee to the Administrator, Environmental Protection Agency. TSCA Interagency Testing Committee, October 1978. Published in the Federal Register, Vol. 43, No. 210, Monday, October 30, 1978, pp. 50630–50635.

5. Fourth Report of the TSCA Interagency Testing Committee to the Administrator, Environmental Protection Agency. TSCA Interagency Testing Committee, April 1979. Published in the Federal Register, Vol. 44, No. 107, Friday, June 1, 1979, pp. 31886–31889.

6. Fifth Report of the TSCA Interagency Testing Committee to the Administrator, Environmental Protection Agency. TSCA Interagency Testing Committee, November 1979. Published in the Federal Register, Vol. 44, No. 237, Friday, December 7, 1979, pp. 70664–70674.

Table 1.—*The TCSA Section 4(e) Priority List*

Entry	Date of designation
1. Acetonitrile	Apr. 1979
2. Acrylamide	Apr. 1978**
3. Alkyl epoxides	Oct. 1977*
4. Alkyl phthalates	Oct. 1977*
5. Aniline and bromo, chloro and/or nitro Anilines	Apr. 1979
6. Antimony (metal)	Apr. 1979
7. Antimony sulfide	Apr. 1979
8. Antimony trioxide	Apr. 1979
9. Aryl phosphates	Apr 1978**
10. Benzidine-based dyes	Nov. 1979
11. Chlorinated benzenes, mono- and di-	Oct. 1977*
12. Chlorinated benzenes, tri-, tetra-, and penta-	Oct. 1978
13. Chlorinated naphthalenes	Apr. 1978**
14. Chlorinated paraffins	Oct. 1977*
15. Chloromethane	Oct. 1977*
16. Cresols	Oct. 1977*
17. *o*-Dianisidine-based dyes	Nov. 1979
18. Dichloromethane	Apr 1978**
19. 1,2-Dichoropropane	Oct. 1978
20. Cyclohexanone	Apr. 1979
21. Glycidol and its derivatives	Oct. 1978
22. Halogenated alkyl epoxides	Apr 1978**
23. Hexachloro-1,3-butadiene	Oct. 1977*
24. Hexachlorocyclopentadiene	Apr. 1979
25. Hydroquinone	Nov. 1979
26. Isophorone	Apr 1979
27. Mesityl oxide	Apr. 1979
28. 4,4'-Methylenedianiline	Apr. 1979
29. Methyl ethyl ketone	Apr. 1979
30. Methyl isobutyl ketone	Apr. 1979
31. Nitrobenzene	Oct. 1977*
32. Phenylenediamines	Apr. 1980
33. Polychlorinated terphenyls	Apr 1978**
34. Pyridine	Apr 1978**
35. Quinone	Nov 1979
36. *o*-Toluidine-based dyes	Nov. 1979
37. Toluene	Oct. 1977*
38. 1,1,1-Trichloroethane	Apr. 1978**
39. Xylene	Oct. 1977*

*Responded to by the EPA Administrator in 43 FR 50134–50136.

**Responded to by the EPA Administrator in 44 FR 28695–28097.

Chapter 2. Recommendations of the Committee

2.1 *Chemicals Designated for Action by the EPA.* As permitted by TSCA Section 4(e)(B), the Committee chooses to make revisions in the Section 4(e) Priority List by the addition of one entry. The designation of this entry was determined after considering the factors identified in Section 4(e)(1)(A) and available relevant information, as well as on the professional judgment of Committee members. The recommended studies for this entry and the rationales to support the recommendations are given in Section 2.2 of this report. As allowed by Section 4(e) of TSCA, the Committee designates this entry for action by the EPA within twelve months of the date of this sixth Committee report.

2.2 *Rationales for Studies on Phenylenediamines, as Defined**

Category Identification

This category is defined as all nitrogen-unsubstituted phenylenediamines with zero to two substituents on the ring selected from the same or different membes of the group of halo, nitro, hydroxy, hydroxy-lower alkoxy, lower-alkyl, and lower-alkoxy. For this purpose, the term "lower" is defined as a group containing between one and four carbons.

Recommended Studies

Carcinogenicity
Mutagenicity
Teratogenicity
Other Toxic Effects
Epidemiology
Environmental Effects

Reasons for Recommendations

Many of the chemicals in the category have demonstrated specific biological activity associated with adverse health effects. Most category members probably have the property to induce methemoglobinemia. Many of the category members have been reported to be genotoxic in one or more assay systems. At least six category members have been reported to be carcinogenic in one or more species. Data on other members raise a high degree of suspicion that they also may be carcinogenic. Other studies have shown that certain category members are readily absorbed through skin. Given the adverse health effects demonstrated by certain category members, the untested and inadequately tested members are regarded as suspect and should be evaluated through the studies recommended herein.

Production and Usage Information

A substructure search was made of the public TSCA Chemical Inventory for chemicals falling within the category definition. A total of 50 chemicals were identified (see Table A), of which 22 had some production information; the 28 remaining chemicals had no production data. When data were available, in many instances they were incomplete in that production amounts were not given for every manufacturer or importer. In such cases, the reported production ranges were still aggregated for the

*See Category Identification.

purpose of assessing potential total production. Production ranges are given for a number of category members in Table B.

Since no production data are available (i.e., in the public inventory) on the majority of category members and only incomplete data on many of the others, the Committee could not accurately assess the extent of possible human exposure to these chemicals. Still, from the available data a number of category members were considered to be in high production. To the extent that data were unavailable, the Committee's assessment of production and possible exposure are underestimates.

An attempt was not made to determine the usage of each chemical identified in the category. Although such a determination would be helpful for more accurately assessing possible human exposure, the Committee considered the available usage information to be of such a nature as to be sufficient for designating the entire category. Usage information is given for a number of category members in Table B.

The Committee concludes that the lack of production and usage information on the majority of category members is insufficient cause to defer designation of the category. To the contrary, given the known high production of some category members, the demonstrated or suspected health effects associated with certain phenylenediamines, and the general usage of these kinds of chemicals, an adequate assessment of all category members is necessary.

Carcinogenicity

A large number of aromatic amines have been identified to be carcinogens, some of which are known to cause bladder cancer in humans (Clayson and Garner, 1976; Tomatis, 1979). Among the carcinogens are both monocyclic and polycyclic aromatic amines. Thus, *a priori* the category members are suspect as a result of belonging to a chemical class known to have certain properties associated with carcinogenicity. Results of carcinogenicity tests on phenylenediamines as defined in the Category Identification, are given in Table C.

Six category members (i.e., 2,4-Toluenediamine; o-Phenylenediamine; 2,4-Diaminoanisole; 4-Chloro-o-Phenylenediamine; 4-Chloro-m-Phenylenediamine; and 2-Nitro-p-Phenylenediamine) have been reported to be carcinogens (Ito et al., 1969; Weisburger et al., 1978; NCI, 1978a; NCI, 1978b; NCI, 1978c; NCI, 1979a; NCI, 1979b).

Three category members are strongly suspect in that increased incidences of bladder cancer—a relatively rare spontaneously occurring tumor-type (Goodman et al., 1979)—were found in treated rats (NCI, 1978d; NCI, 1979c; NCI, 1979e). Two of the three chemicals (i.e., 2,5-Toluenediamine and p-Phenylenediamine) were reported to be mutagenic (Ames et al., 1975; Nishioka, 1976; Venitt and Searle, 1976; Dybing and Thorgeirsson, 1977); no published short-term test results were found on the third chemical (i.e., 2-Chloro-p-Phenylenediamine).

Three category members (i.e., 4-Nitro-o-Phenylenediamine, m-Phenylenediamine, and 2,6-Toluenediamine) were studied and found not to be carcinogenic under the conditions of test (Weisburger et al., 1978; NCI, 1979d; NCI, 1980). Yet, each of the category members was found to be active in a variety of short-term assays. 4-Nitro-o-Phenylenediamine was mutagenic in *Salmonella typhimurium* (Ames et al., 1975; Searle et al., 1975; Mohn and de Serres, 1976; Venitt and Searle, 1976; Yoshikawa et al., 1976), L5178Y mouse lymphoma cells (Palmer et al., 1977), and *Drosophilia melanogaster* (Blijleven, 1977); caused chromosome damage in Chinese hamster prostate cells (Institute of Cancer Research, 1976; Kirkland and Venitt, 1976), and C3H/10T½ mouse cells (Benedict, 1976), but was inactive in human peripheral blood lymphocytes (Searle et al., 1975), and rat bone marrow (Hossack and Richardson, 1977); and transformed Syrian hamster embryo cells (Pienta and Kawalek, 1979) and C3H/10T½ mouse cells (Benedict, 1976).

m-Phenylenediamine was mutagenic in *Salmonella typhimurium* (Ames et al., 1975; Venitt and Searle, 1976; Yoshikawa et al., 1976; Dybing and Thorgeirsson, 1977) and in L5178Y mouse lymphoma cells (Palmer et al., 1977). 2,6-Toluenediamine was mutagenic in *Salmonella typhimurium* (Dybing anf Thorgeirsson, 1977). One of the chemicals not yet studied for carcinogencity (i.e., 2,5-Diaminoanisole) was mutagenic in *Salmonella typhimurium* (Ames et al., 1975; Mohn and de Serres, 1976) but was inactive in L5178Y mouse lymphoma cells (Palmer et al., 1977).

The increased incidence of bladder tumors and results of short-term tests strongly indicate the need to reassess the carcinogenicity of those category members which were not shown to be carcinogenic under the conditions of test. Such a reassessment should include an evaluation of the most appropriate test species for detecting the possible carcinogenicity of phenylenediamines. The Committee recommends that carcinogenicity studies be conducted on those category members not yet tested or inadequately tested.

Mutagencity

The mutagenicity of many category members is well established (see Table C). A number of category members have shown mutagenicity in both bacterial systems (Ames et al., 1975; Searle et al., 1975; Mohn and de Serres, 1976; Nishioka, 1976; Dybing and Thorgeirsson, 1977) and higher organisms (Blijven, 1977; Palmer et al., 1977). In addition, some have induced chromosome damage (Searle et al., 1975; Benedict, 1976; Institute of Cancer Research, 1976; Kirkland and Venitt, 1976). Based on these findings the Committee recommends that appropriate tests be undertaken to assess the mutagenic potential of those category members not yet tested or inadequately tested.

Teratogenicity

Two studies were identified in which hair dye formulations, of which category members were components, were tested for teratogenicity. No teratogenic effects were reported in one of the studies done in rats and rabbits (Wernick et al., 1975). In the other study, it was reported that a statistically significant incidence in skeletal anomalies occurred in fetuses from rats treated with one of the formulations (Burnett, et al., 1976). Only one report was found in which a category member itself was studied for teratogenicity. In this study, 2,5-Toluenediamine was reported to cause a high incidence of skeletal malformations in fetuses from treated mice (Inouye and Murakami, 1977). Exencephaly and prosoposchisis also were found in some of the treated fetuses.

Teratogenic effects, particularly ones of a functional nature, may occur as a result of oxygen deprivation. In some cases, the blood oxyhemoglobin concentration may fall below the critical oxygen demand level resulting in clinically manifested cyanosis. Birth defects from acute hypoxia oranoxia are well known. Teratogenic effects from less severe but chronic hypoxia are also of concern. One study reported reduced birth weight and weight gain, reduced behavior activity levels, altered catecholamine activity, and reduction in total brain protein in rats prenatally exposed to low concentrations of carbon monoxide (Fechter and Annau, 1977). Maternal levels of carboxyhemoglobin were equivalent to those found in cigarette smokers. Since aromatic

amines, and in particular certain category members (Waring and Pheasant, 1976; de Bruin, 1978), may cause reduced oxygen blood levels by the induction of methemoglobinemia, the possible untoward effects of these compounds on the unborn fetus are of concern. The level of concern is raised by reports of systemic absorption of certain category members in both laboratory animals and humans (Kiese et al., 1968; Kiese and Rauscher, 1968).

The report that 2,5-Toluenediamine is teratogenic and the potential for possible adverse effects resulting from reduced oxygen-transporting capacity of blood in individuals exposed to phenylenediamines, causes concern regarding the possible teratogenic effects of category members. Based on this concern and the general lack of knowledge about the teratogenic potential of phenylenediamines, the Committee recommends that appropriate tests be undertaken to assess the teratogenicity of category members.

Other Toxic Effects

Aromatic amino compounds are effective inducers of methemoglobinemia, although the intensity of induction is related to the toxicity of individual chemicals, experimental species, and conditions of test (de Bruin, 1978). Humans are particularly sensitive to compounds that induce methemoglobinemia. 2,4-Diaminotoluene has been reported to induce methemoglobinemia in rats, guinea-pigs, and rabbits (Waring and Pheasant, 1976). Other category members also are suspect methemoglobinemia inducers. p-Phenylenediamine has been reported to provoke contact sensitization of the skin and a variety of allergies (Mayer, 1954). The ability of certain category members to produce methemoglobinemia and phypersensitivity, coupled with the potential for systemic absorption (Kiese and Rauscher, 1968; Kiese et al., 1968), is of concern. The Committee thus recommends that category members be assessed for health effects not already specified herein, with particular emphasis on blood, bone marrow, and nervous system disorders.

Epidemiology

Many aromatic amines are carcinogens, of which some are known to cause cancer in humans (Clayson and Garner, 1976). The phenylenediamines constitute an important family of chemicals within the aromatic amine class. The use of many of these chemicals as dyes (or in dye formulations) for textiles and other consumer products results in the potential for widespread general population exposure to them. Occupational exposure of workers is also of concern, particularly because of the large number of commercial phenylenediamines and the known high production volumes of those used in the manufacture of polyurethanes.

Concern about human exposure is raised as a result of studies showing the absorption of certain category members through skin. Concentrations of p-Phenylenediamine, m-Phenylenediamine, and 2,5-Toluenediamine were detected in the blood and urine of dogs within hours after skin application of the chemicals (Kiese et al., 1968). In a study done in humans, 2,5-Toluenediamine was reported to be absorbed when injected subcutaneously or applied to the hair as part of a dye preparation (Kiese and Rauscher, 1968).

In one epidemiologic study, an excess of bladder cancer deaths was strongly associated with the production of dyes and dye intermediates (Hoover and Fraumeni, 1975). A number of earlier studies have also shown similar associations (Cole and Goldman, 1975). The International Agency for Research on Cancer (IARC) has evaluated and summarized a number of epidemiologic studies on the association between exposure to hair dyes and cancer risk (IARC, 1978). Although no firm conclusions were drawn, IARC states that "The epidemiologic evidence suggests an elevated risk for both users of hair dyes and those with occupational exposure (barbers and hairdressers) to hair preparations." A recently reported case-control study did not find an increased risk of either breast or endometrium cancer in users of hair dyes (Stavraky et al., 1979).

Given the potential for widespread human exposure to chemicals in the category, the known or suspect carcinogenicity and mutagenicity of certain phenylenediamines, and the equivocal nature of the epidemiologic studies, the Committee recommends that epidemiologic studies be undertaken to assess the possible adverse health effects of those category numbers for which there is significant potential human exposure.

Environmental Effects

Although category members are generally thought to biodegrade rapidly, the environmental fate and effects of the phenylenediamines and their breakdown products are unknown. Based on this lack of knowledge, the Committee recommends that appropriate tests be conducted to evaluate the potential environmental effects of the category members. Of particular concern is effects on organisms repeatedly exposed from constant release sources of category members.

Table A—Phenylenediamines, As Defined* In TSCA Initial Chemical Inventory

CAS No. and Name

1. 95545 o-Diaminobenzene
2. 95705 2,5-Diaminotoluene
3. 95807 1,3-Diamino-4-methylbenzene
4. 95830 o-Phenylenediamine,4-chloro-
5. 99569 o-Phenylenediamine,4-nitro-
6. 106503 p-Diaminobenzene
7. 108452 m-Diaminobenzene
8. 108714 3,5-Diaminotoluene
9. 137097 2,4-Diaminophenol dihydrochloride
10. 496720 1,2-Diamino-4-methylbenzene
11. 541695 m-Phenylenediammonium dichloride
12. 541706 m-Phenylenediamine, sulfate (1:1)
13. 614948 m-Phenylenediamine,4-methoxy, dihydrochloride
14. 615054 m-Phenylenediamine,4-methoxy
15. 615281 Phenylenediamine, dihydrochloride
16. 615452 1,4-Benzenediamine,2-methyl-,dihydrochloride
17. 615463 p-Phenylenediamine,2-chloro-,dihydrochloride
18. 615509 2,5-Diaminotoluene sulfate
19. 624180 p-Phenylenediamine, dihydrochloride
20. 823405 2,6-Diamino-1-methylbenzene
21. 1197371 o-Phenylenediamine,4-ethoxy-
22. 1477550 a,a'-Diamino-m-xlyene
23. 2687254 1,2-Diamino-3-methylbenzene
24. 3663238 o-Phenylenediamine,4-butyl-
25. 5042557 m-Phenylenediamine,5-nitro-
26. 5131588 m-Phenylenediamine,4-nitro-
27. 5131602 m-Phenylenediamine,4 chloro
28. 5307028 p-Diaminoanisol
29. 5307142 p-Phenylenediamine,2-nitro
30. 6219676 m-Phenylenediamine,4-methoxy, sulfate
31. 6219712 p-Phenylenediamine,2-chloro-,sulfate
32. 6219778 o-Phenylenediamine,4-nitro-,dihydrochloride
33. 6369591 1,4-Benzenediamine,ethanedioate (1:1)
34. 15872738 4,6-Diamino-o-cresol
35. 16245775 p-Phenylenediamine sulfate
36. 18266529 p-Phenylenediamine,2-nitro-,dihydrochloride
37. 20103097 p-Phenylenediamine,2,5-dichloro-
38. 25376458 Diaminotoluene
39. 39156417 2,4 Diaminoanisole sulfate
40. 42388300 1,2-Benzenediamine, 5-chloro-3-nitro
41. 62654175 1,4-Benzenediamine, ethanedioate (1:1)
42. 65879449 4,6-Diamino-2-methylphenol,hydrochloride
43. 66422955 Ethanol, 2-(2,4-diaminophenoxy)-,dihydrochloride
44. 67801063 1,3-Benzenediamine, 4-ethoxy-,dihydrochloride
45. 68015985 1,3-Benzenediamine, 4-ethoxysulfate (1:1)

46. 68239805 m-Phenylenediamine,4-chloro-,sulfate
47. 68239827 1,2-Benzenediamine, 4-nitro-,sulfate (1:1)
48. 68239838 1,4-Benzenediamine, 2-nitro-,sulfate (1:1)
49. 68459983 1,2-Benzenediamine, 4-chloro-,sulfate (1:1)
50. 68966847 1,3-Benzenediamine,ar-ethly-ar-methyl

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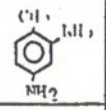
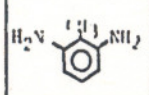
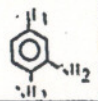
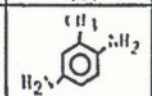
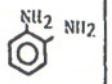
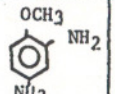
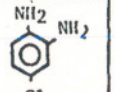
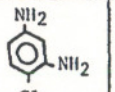
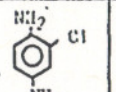
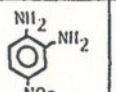
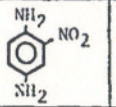
TABLE B

SELECTED CHEMICAL PROPERTIES AND CHEMICAL-ECONOMIC INFORMATION OF PHENYLENEDIAMINES

NAME CAS NO.	STRUCTURE	MOLECULAR WEIGHT	LOG OCTANOL WATER PART. COEFFIC.[a]	CONSUMPTION--lbs./yr[b] U.S. PRODUCTION	CONSUMPTION--lbs./yr[b] IMPORTS	OCCUPATION. EXPOSURE[c]	MAJOR USES
2,4-Toluenediamine 95807		122.17	0.50	130-350 million+[d]	+[d]		Primary usage is as an intermediate for 2,4-diisocyanate, which is used in the production of polyurethane;also used as an intermediate in the synthesis of dyes for textiles, fur,leather,biological stains,spirit varnishes and wood stains (IARC, 1978).
Diaminotoluene 25376458	Mixed Isomers	122.17		100-200 million+	+		Used in the production of polyurethane foams (The Condensed Chemical Dictionary, 1977) and in dye manufacture (Faith, Keys and Clark's Industrial Chemicals, 1975).
2,6-Toluenediamine 823405		122.17	0.50	21-110 million+	None Reported[e]		Used in the synthesis of toluene diisocyanate,which is used in the production of flexible polyurethane foams and elastomers (Milligan, 1968 and Laver, 1968); also used as an intermediate in the synthesis of dyes for textiles and furs (Society of Dyers and Colourists, 1971).
2,3-Toluenediamine 2637254		122.17	0.65	2.2-22 million+	None Reported		Used as an intermediate for toluene diisocyante production (Faith, Keys and Clark's Industrial Chemicals, 1975).
3,4-Toluenediamine 496720		122.17	0.65	0.4-4.1 million+	None Reported		
2,5-Toluenediamine 95705		122.17	0.25	0.1-1 million	None Reported		Used as an intermediate in the production of dyes for cotton,wool,silk,leather,and paper; and in pigments, spirit inks; as a biological stain; and as a solvent dye. Also used in hair-dye formulations (IARC, 1978).
m-Phenylenediamine 108452		108.15	0.00	0.1-1.1 million+	10,000-100,000+	12,377	Used in the production of a large variety of dyes for textile fibers and other materials,e.g.,leather,paper,polishes,and spirit inks. Also used as a direct dye developer and in hair-dye formulations. Other uses include an epoxy resin curing agent and analytical reagent (IARC, 1978).
p-Phenylenediamine 106503		108.15	- 0.25	+	No 1977 Production Reported	86,972	Used as an intermediate in the production of dyes for furs and inks. Also used in hair-dye formulations,in a variety of antioxidants,in photographic developers,and as an industrial chemical intermediate (IARC, 1978).

NAME CAS NO.	STRUCTURE	MOLECULAR WEIGHT	LOG OCTANOL WATER PART. COEFFIC.[a]	CONSUMPTION--lbs./yr.[b]		OCCUPATION EXPOSURE[c]	MAJOR USES
				U.S. PRODUCTION	IMPORTS		
o-Phenylenediamine 95545		108.15	0.15	+	+		Used as a dye intermediate (The Condensed Chemical Dictionary, 1977).
2,4-Diaminoanisole 615054		138.17		None Reported	+	7,254	The sulfate has been used as a coupler in permanent hair dye formulations (Corbett and Menkart, 1973). It is also used as an oxidative base to dye furs and as an intermediate in the production of textile dyes (Society of Dyer and Colourists, 1971).
4-Chloro-o-phenylenediamine 95830		142.60		1,000-10,000	None Reported		Used as an oxidative base in dyes (Society of Dyers and Colourists, 1956) and as a dye intermediate (Kadhim and Peters, 1974); also used in the synthesis of drugs (Stolyarchuk et al., 1975 and Actor and Pagano, 1975).
4-Chloro-m-phenylenediamine 5131602		142.60	0.90	+	+		Used in the production of dyes (Society of Dyers and Colourists, 1956) and pigments (Mueller, 1975 and Papenfuhs, 1975). Can also be used as a coupler in hair-dye formulations (Corbett, 1973).
2-Chloro-p-phenylenediamine 6219712		142.60		None Reported	No 1977 Production Reported		Used as intermediates in the production of permanent hair dyes (Richardson, 1977).
4-Nitro-o-phenylenediamine 99569		153.15		10,000-100,000+	No 1977 Production Reported	7,254	Used as a dye in semipermanent hair colorants (Corbett and Menkart, 1973) and as an ingredient in permanent hair dye formulations (Burnett et al., 1976). Also used in fur dyeing (Society of Dyers and Colourists, 1956).
2-Nitro-p-phenylenediamine 5307142		153.15		10,000-100,000	1,000+		Used as a dye in semipermanent hair colorants (Corbett and Menkart, 1973) and as an ingredient in permanent hair dye formulations (Burnett et al., 1976). Also used in fur dyeing (Society of Dyers and Colourists, 1956).

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Notes:

a. Leo et al., 1971.
b. TSCA Initial Chemical Inventory.
c. National Occupational Hazards Survey, 1977.
d. "+" indicates that manufacturers and/or importers were listed on the TSCA Initial Chemical Inventory that did not report production and/or import amounts.
e. "None Reported" in the TSCA Initial Chemical Inventory.

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TABLE C

MUTAGENICITY, CHROMOSOME DAMAGE, CELL TRANSFORMATION. AND CARCINOGENIC POTENTIAL OF PHENYLENEDIAMINES

NAME CAS NO.	MUTAGENICITY				CHROMOSOME DAMAGE				CELL TRANSFORMATION		CARCINOGENICITY	
	BACTERIAL		HIGHER ORGANISMS									
	S. typhimurium	*E. coli*	L5178Y mouse lymphoma cells	Drosophilia melanogaster	Human Peripheral blood lymphocytes	Chinese hamster prostate cells	C3H/10T½ mouse cells	Rat micronucleus test	Syrian hamster embryo cells	C3H/10T½ mouse cells	Rat[a]	Mouse[a]
2,4-Toluenediamine 95807	+ (1) + (5)			+ (10)					+ (14)		+ (15) + (16) + (17)	? (16) + (17) -[b](18)
2,6-Toluenediamine 823405	+ (6)										? (19)	- (19)
2,3-Toluenediamine 2687254												
3,4-Toluenediamine 496720	± (6)											
2,5-Toluenediamine 95705	+ (1)	+ (7)						- (9)			±[c](20) -[b](21)	±[c](20)
m-Phenylenediamine 108452	+ (1) + (6) + (5) + (4) + (30)		+ (8)						? (14)		- (16)	- (16)
p-Phenylenediamine 106503	+ with H_2O_2 (1) + (6) + (4) + (30)	+ (7)		+ (10)				- (9)			± (22)	- (22) -[b](23)

NAME CAS NO.	MUTAGENICITY				CHROMOSOME DAMAGE				CELL TRANSFORMATION		CARCINOGENICITY	
	BACTERIAL		HIGHER ORGANISMS									
	S. typhimurium	*E. coli*	L5178Y mouse lymphoma cells	Drosophilia melanogaster	Human Peripheral blood lymphocytes	Chinese hamster prostate cells	C3H/10T½ mouse cells	Rat micronucleus test	Syrian hamster embryo cells	C3H/10T½ mouse cells	Rat[a]	Mouse[a]
o-Phenylenediamine 95545	+ (1) + (4) + (30)										+ (16)	(16)
2,4-Diaminoanisole 615054	+ (6) + (5)	+ (7)	? (8)	+ (10)				- (9)	- (14)		+ (24)	(24)
2,5-Diaminoanisole	+ (1) + (3)		- (8)									
4-Chloro-o-phenylenediamine 95830	+ (5)										+ (25)	(25)
4-Chloro-m-phenylenediamine 5131602											? (26)	(26)
2-Chloro-p-phenylenediamine 6219712											±[d] (27)	(27)
4-Nitro-o-phenylenediamine 99569	+ (1) + (2) + (3) + (5) + (4) + (30)		+ (8)	+ (10)	- (2)	+ (12) + (11)	+ (13)	- (9)	+ (14)	+ (13)	- (28)	(28)

NAME CAS NO	MUTAGENICITY				CHROMOSOME DAMAGE				CELL TRANSFORMATION		CARCINOGENICITY	
	BACTERIAL		HIGHER ORGANISMS									
	S typhimurium	*E coli*	L5178Y mouse lymphoma cells	Drosophilia melanogaster	Human Peripheral blood lymphocytes	Chinese hamster prostate cells	C3H/10T½ mouse cells	Rat micronucleus test	Syrian hamster embryo cells	C3H/10T½ mouse cells	Rat[a]	Mouse[a]
2-Nitro-p-phenylenediamine 5307142	+ (1) + (2) + (5) + (4) + (30)		+ (8)		+ (2)	+ (12) + (11)	+ (13)	- (9)	+ (14)	+ (13)	- (29)	+ (29)

NOTES: a Chemicals were administered in the animals' feed, unless indicated otherwise
b Chemical was applied to the skin of the animals
c Compound tested was the 2,5-toluenediamine sulfate
d Compound tested was the 2-chloro-p-phenylenediamine sulfate

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(4) Venitt and Searle, 1976
(5) Yoshikawa et al , 1976
(6) Dybing and Thorgeirsson, 1977
(7) Nishioka, 1976
(8) Palmer et al , 1977
(9) Hossack and Richardson, 1977
(10) Blijleven, 1977
(11) Institute of Cancer Research, 1976
(12) Kirkland and Venitt, 1976
(13) Benedict, 1976
(14) Pienta and Kawalek, 1979
(15) Ito et al , 1979
(16) Weisburger et al , 1978
(17) NCI, 1979a
(18) Giles and Chung, 1976
(19) NCI, 1980
(20) NCI, 1978e
(21) Kinkel and Holzmann, 1973
(22) NCI, 1979c
(23) Stenback et al , 1977
(24) NCI, 1978b
(25) NCI, 1978a
(26) NCI, 1978c
(27) NCI, 1978d
(28) NCI, 1979d
(29) NCI, 1979b
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FEDERAL COMMUNICATIONS COMMISSION

Notification List; Canadian Standard Broadcast

Correction

In FR Doc. 80–15395, published at page 33721, on Tuesday, May 20, 1980, make the following corrections in the table:

1. Under the last column "Proposed Date of Commencement of Operation" the first two dates "Apr. 11, 1971" should be corrected to read "Apr. 11, 1981";

2. Under the second column "Location", in the third entry "Oakville, Ontario", in the second line of the entry "(P.O. N 43 26 10 W 43" should be corrected to read "(P.O. N 43 26 10 W 79 43".

BILLING CODE 1505-01-M

Radio Technical Commission for Marine Services

Meetings

In accordance with Pub. L. 92–463, "Federal Advisory Committee Act," the schedule of future Radio Technical Commission for Marine Services (RTCM) meetings is as follows:

Special Committee No. 75

"MPS—Automatic Coordinate Conversion Systems", notice of 3d meeting, Thursday, June 12, 1980—9:30 a.m. Maritime Institute of Technology, 5700 Hammonds Ferry Road, Linthicum Heights, Md.

Agenda

1. Call to Order; Chairman's Report.
2. Approval of the Summary Record of previous meeting.
3. Presentations of Technical and Operational issues.
4. Designation of Working Groups.
5. Establishment of future meeting schedule.

Executive Committee Meeting

Notice of June Meeting, Thursday, June 19, 1980—9:30 a.m., Conference Room 8334, Nassif (DOT) Building, 400 Seventh Street S.W. at D Street, Washington, D.C.

Agenda

1. Administrative Mattes.
2. Review of Special Committees' Terms of References.

The RTCM has acted as a coordinator for maritime telecommunications since its establishment in 1947. All RTCM meetings are open to the public. Written statements are preferred, but by previous arrangement, oral presentations will be permitted within time and space limitations.

Those desiring additional information concerning the above meeting(s) may contact either the designated chairman or the RTCM Secretariat (phone: (202) 632–6490).

Federal Communications Commission.

William J. Tricarico,

Secretary.

[FR Doc. 80-16054 Filed 5-23-80; 8:45 am]
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FEDERAL EMERGENCY MANAGEMENT AGENCY

Implementation of the Federal Employees Part-time Career Employment Act of 1978

AGENCY: Federal Emergency Management Agency.

ACTION: Proposed implementation of the Federal Employees Part-time Career Employment Act of 1978, 5 U.S.C. 3401 et seq. by establishing a continuing program to provide career part-time employment opportunities within all component organizations of the Federal Emergency Management Agency.

SUMMARY: In accordance with 5 U.S.C. 3106, the Federal Emergency Management Agency is required to publish its instructions in proposed form and to provide an opportunity for interested parties to comment. After comments have been received and reviewed, the final instructions will be issued as Chapter 3100 of the Agency's Internal Directive System. Copies of Chapter 3100 will be available to the public and can be obtained by writing to the address indicated below. The proposed instructions do not meet the Federal Emergency Management Agency criteria for significant regulations.

DATES: Written comments will be considered if received by the official named below on or before July 28, 1980. Provisions will be made for subsequent oral comment if sufficient need is indicated. The final instruction shall be effective on the date issued.

ADDRESS: Albert G. Maltz, Director of Personnel, Federal Emergency Management Agency, 1725 I Street, N.W., Washington, D.C. 20472.

FOR FURTHER INFORMATION CONTACT: Earl M. Sneed, Phone: 703–235–2476 (this is not a toll free number).

Part-time Career Employment Program

I. General Provisions.
II. Program Implementation.
III. Part-time Employment Practices.