

State of California

AIR RESOURCES BOARD

**Final Statement of Reasons
for Rulemaking**

**PUBLIC HEARING TO CONSIDER THE ADOPTION
OF AMENDMENTS TO THE REGULATION FOR
REDUCING VOLATILE ORGANIC COMPOUND
EMISSIONS FROM CONSUMER PRODUCTS--
PHASE II**

Scheduled for Consideration: January 9, 1992

Agenda Item No.: 92-1-1



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Including Summary of Comments and Agency Responses

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TABLE OF CONTENTS

<u>Contents</u>	<u>Page</u>
I. INTRODUCTION.....	5
II. GENERAL RATIONALE FOR THE REGULATION.....	10
III. MODIFICATIONS MADE TO THE CONSUMER PRODUCTS AND ANTIPERSPIRANTS AND DEODORANTS REGULATIONS.....	13
A. Modifications approved by the Air Resources Board for the Consumer Products Regulation	
1. <u>Section 94508</u>	13
2. <u>Section 94509(a)</u>	13
<u>Section 94509(b)</u>	14
<u>Section 94509(c)</u>	14
<u>Section 94509(h)</u>	14
3. <u>Section 94510</u>	14
4. <u>Section 94511</u>	15
5. <u>Section 94512</u>	16
6. <u>Section 94513</u>	16
7. <u>Section 94514</u>	16
8. <u>Section 94515</u>	17
B. Modifications approved by the Air Resources Board for the Antiperspirants and Deodorants Regulation	17
IV. SUMMARY OF COMMENTS AND AGENCY RESPONSES.....	18
<u>45-Day Period Comments</u>	
A. Administrative Requirements.....	27
B. Definitions.....	30
C. Economic Impacts of the Regulations.....	35

D.	Emissions and Air Quality Impacts.....	46
E.	Exemptions.....	55
F.	FIFRA Issues.....	55
G.	Innovative Products.....	61
H.	LVP Policy.....	77
I.	Miscellaneous Issues.....	75
J.	Ozone-Depleting Compounds.....	85
K.	Registration.....	87
L.	"Sell-Through" Period.....	92
M.	Technological and Commercial Feasibility.....	104
N.	Test Methods.....	112
O.	Variances.....	120
P.	Comments on Specific Categories of Consumer Products.....	121
	Aerosol Cooking Sprays.....	121
	Automotive Brake Cleaners.....	133
	Carburetor-Choke Cleaners.....	142
	Charcoal Lighter Material.....	152
	Disinfectants.....	158
	Dusting Aids.....	164
	Glass Cleaners.....	164
	Hand Dishwashing Detergents.....	168
	Household Adhesives.....	171
	Insecticides.....	172
	Laundry Prewash.....	179
	Laundry Starch Products.....	181
	Personal Fragrance Products.....	184

Response to Comments Received During the First 15-Day Comment Period

Q.	Administrative Requirements.....	187
R.	Definitions.....	189
S.	Emissions and Air Quality Impacts.....	193
T.	Exemptions.....	198
U.	FIFRA Issues.....	203

V.	Miscellaneous Issues.....	204
W.	Ozone-Depleting Compounds.....	206
X.	Registration.....	206
Y.	"Sell-Through" Period.....	214
Z.	Test Methods.....	215
AA.	Variances.....	219
BB.	VOC Survey.....	219
CC.	Comments on Specific Categories of Consumer Products.....	220
	Aerosol Cooking Sprays.....	220
	Automotive Brake Cleaners.....	221
	Carburetor-Choke Cleaners.....	222
	Charcoal Lighter Material.....	223
	Insecticides.....	225
	Personal Fragrance Products.....	225
	Comments on the Antiperspirants and Deodorants Regulation	
DD.	Definitions.....	226
EE.	"Sell-Through" Period.....	226
FF.	Variances.....	227
	<u>Response to Comment Received During the Second</u>	
	<u>15-Day Comment Period.....</u>	227

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I. INTRODUCTION

On January 9, 1992, the Air Resources Board (the "Board" or "ARB") conducted a public hearing to consider amendments to the regulation for reducing the volatile organic compound (VOC) emissions from consumer products (the "consumer products" regulation; Title 17, California Code of Regulations (CCR), sections 94507-94517) and to amend the regulation for reducing VOC emissions from antiperspirants and deodorants (the "antiperspirant" regulation; Title 17, CCR, sections 94500-94506.5). The proposed regulatory action adds ten additional consumer product categories to the Table of Standards (which specifies the allowable VOC content of consumer products within specified time periods), and imposes other

regulatory requirements. The amendments to the antiperspirant regulation achieves consistency by making the provisions of the antiperspirant regulation consistent with the consumer products regulation.

The notice of proposed adoption had an originally scheduled hearing date of December 12, 1991. However, to accommodate the re-scheduling of other Board items from the November 1991 agenda to the December 1991 agenda, the hearing date for the proposed regulatory action was postponed until January 9, 1992. A notice of postponement was made available to the public on November 26, 1991, was mailed to each of the individuals described in section 11346.4(a)(1) through (a)(4), Title 1, CCR, and was published in the California Regulatory Notice Register. The notice of postponement was also conspicuously posted on the door of the Board hearing room in accordance with Government Code section 11129.

At the hearing, the Board adopted Resolution 92-1, in which the Board approved amendments to both the consumer products and antiperspirant regulations. The amendments approved by the Board will be contained in Title 17, CCR, sections 94500-94517. The approved amendments included various modifications from the text originally proposed by staff in the hearing notice dated October 15, 1991. Most of these changes were based on modifications suggested by staff at the January 9, 1992 hearing. The modified regulations were made available to the public for a 15-day comment period from April 15, 1992 to April 30, 1992 pursuant to Government Code Section 11346.8(c). The "Notice of Public Availability of Modified Text" together with a copy of the full text of the regulations with the modifications clearly indicated was mailed April 15, 1992 to each of the individuals described in subsections (a)(1) through (4) of section 44, Title 1, CCR.

In response to comments received during the 15-day comment period, the Executive Officer determined that it was appropriate to make additional modifications to the regulations. Accordingly, the modified regulations were made available for a second 15-day comment period from August 17, 1992

to September 1, 1992 pursuant to Government Code section 11346.8(c). The "Supplemental Notice of Public Availability of Modified Text" together with a copy of the relevant text of the regulations with the modifications clearly indicated was mailed August 17, 1992 to each of the individuals described in subsections (a)(1) through (4) of section 44, Title 1, CCR. By Executive Order #G-774, the Executive Officer subsequently adopted the modified regulations. All modifications made to the regulations are discussed in detail in Section III of this Final Statement of Reasons. It should also be noted that certain additional documents and information were added to the rulemaking record after the close of the public hearing. These additional documents and information were described in each of the 15-day notices mentioned above, were made available for public comment as specified in these notices.

A Staff Report was prepared which constitutes the Initial Statement of Reasons for the proposed rulemaking. This Staff Report was released October 15, 1991. On the same date, the staff released a Technical Support Document ("TSD"), including various Appendices to the TSD. The Staff Report, Technical Support Document, and Appendices are incorporated herein by reference. This Final Statement of Reasons updates these documents by identifying and explaining the rationale for the modifications made to the originally proposed texts. The Final Statement of Reasons also contains a summary of comments received during the formal rulemaking process and the ARB's responses to these comments.

The Board has determined that the proposed amendments will not create costs or savings, as defined in Government Code section 11346.5(a)(6), to any state agency or in federal funding to the state, costs or mandate to any local agency or school district whether or not reimbursable by the state pursuant to Part 7 (commencing with section 17500 of Division 4 of the Government Code), or other nondiscretionary savings to local agencies.

In developing the proposal, the staff considered the potential cost impact of the proposed amendments on private persons or businesses directly

affected. ARB staff estimated that the total annual cost to the consumer products industry would range from 13 to 205 million dollars, and the cost-effectiveness of the proposed regulatory action would range from less than one cent to \$1.10 per pound of VOCs reduced. The Board also determined that the proposed regulatory changes will not have a significant adverse economic impact on small businesses. The Board has further determined that no alternative was presented or considered which would be more effective in carrying out the purpose for which the amendments were proposed or which would be as effective and less burdensome to affected persons than the adopted amendments.

Four documents are currently incorporated by reference in the consumer products regulation (section 94515(a), Title 17, CCR). The proposed amendments incorporate by reference the following additional documents, which are listed in section 94515(c)-(f):

- (1) American Society for Testing and Materials (ASTM) Test Method D-4359-90 (May 25, 1990);
- (2) South Coast Air Quality Management District Rule 1174 Ignition Method Compliance Certification Protocol (February 28, 1991);
- (3) ASTM D86-90 (September 28, 1990);
- (4) Association of Official Analytical Chemists (AOAC) Official Method of Analysis No. 932.11, 1990, "Essential Oil in Flavor Extracts and Toilet Preparations, Babcock Method" (AOAC Official Methods of Analysis, 15th Edition, 1990).

These four additional documents were incorporated by reference because it would be cumbersome, unduly expensive, and otherwise impractical to print them in the CCR. The documents are complicated and lengthy test methods that would add unnecessary additional volume to a complex regulation. As the interested audience for these documents is small (primarily laboratories

who formulate and test consumer products), distribution to all recipients of the CCR is not needed. Furthermore, it has been a longstanding and accepted practice for the ARB to incorporate test methods by reference, and the affected public is accustomed to this format. As mentioned above, four other test methods have previously been incorporated by reference in the consumer products and antiperspirant regulations. (See Title 17, CCR, sections 94506(a) and 94515(a))

The aforementioned documents were made available in the context of the subject rulemaking in the manner specified in Government Code section 11364.7, and will continue to be made available by the ARB upon request. The documents are also readily available from commonly known sources. The American Society for Testing and Materials (ASTM) publishes an "Annual Book of ASTM Standards" which consists of a number of bound volumes. The ASTM test methods (incorporated by reference in section 94515(c) and (e)) are contained in these volumes. These documents are available at public and college libraries, and can also be purchased directly from the American Society for Testing and Materials. They are widely used by industry, government agencies, scientists, engineers and the general public. The South Coast Air Quality Management District (SCAQMD) charcoal lighter material test method is currently incorporated by reference in SCAQMD Rule 1174, and is available from the SCAQMD. Finally, the test method to determine fragrance content in personal fragrance products is available from the Association of Official Analytical Chemists and is used by the U.S. Bureau of Alcohol, Tobacco, and Firearms for determining the fragrance oil content in fragrances.

For the record, in the transcript of the January 9, 1992 Board hearing there are a few references to a document called the "boardbook" or "handbook". This document consists of the hearing notice, initial statement of reasons, and the text of the regulations for the proposed rulemaking action. The boardbook is provided as a convenience to Board members and the public so that a single document can be referred to in testimony and Board discussions.

II. GENERAL RATIONALE FOR THE REGULATION

The Staff Report and the Technical Support Document set forth the rationale for the amendments to the regulations. This section of the Final Statement of Reasons briefly summarizes the general rationale.

In 1988, the Legislature enacted the California Clean Air Act of 1988 (the "Act", Stats. 1988, Chapter 1568) to address the air pollution problems of California. The federal ambient air quality standard for ozone is exceeded in nine of the state's 14 air basins, and the more stringent state ozone standard is exceeded in 10 air basins. It has been estimated that 75 percent of the nation's health risk from exposure to ozone occurs in California. In 1991, the state ozone standard was exceeded on 183 days in the South Coast Air Basin, which includes the most populated metropolitan areas of Los Angeles and Orange Counties. The state PM10 standard is violated in virtually the entire state. In the Act, the Legislature declared that attainment of the Board's health-based air quality standards is necessary to protect public health, particularly of children, older people, and those with respiratory diseases. The Legislature also directed that these standards be attained by the earliest practicable date.

Section 41712 directs the Board to adopt regulations to achieve the maximum feasible reduction in reactive organic compounds emitted by consumer products, if the Board determines that adequate data exists for it to adopt the regulations, and if the regulations are technologically and commercially feasible and necessary. In enacting section 41712, the Legislature gave the Board clear new authority to control emissions from consumer products, an area that had previously been subject to very few regulations.

Two regulations were adopted by the Board to fulfill the requirements of the Act as it pertains to consumer products. On November 8, 1989, the Board approved a regulation to reduce VOC emissions from antiperspirants and deodorants. The approved regulation became legally effective on

February 27, 1991, and is contained in Title 17, CCR, sections 94500-94506.5. On October 11, 1990, the Board approved a second, more comprehensive regulation to reduce VOC emissions from 16 categories of consumer products (hereafter referred to as the "Phase I" consumer products regulation). The approved regulation became legally effective on October 21, 1991, and is contained in Title 17, CCR, sections 94507-94517.

These two adopted regulations address 17 of the numerous categories of consumer products subject to the Act. To achieve the maximum feasible reduction in VOCs from consumer products as required by law, ARB staff examined the potential for emission reductions from additional consumer product categories. In the year subsequent to the Board action in October 1990, a survey of consumer products was conducted, and technical investigations were undertaken to determine if there were additional product categories that could contribute to emission reductions. Based on the findings, the Board determined that it was appropriate to add standards for 10 new categories (Phase II). Additionally, several amendments to the existing consumer products regulation were approved to clarify and improve the regulation. Finally, several amendments to the existing antiperspirant regulation were approved to make its provisions more consistent with the provisions of the consumer products regulation.

Consumer products are widely distributed goods that contain varying quantities of VOCs. The use of consumer products results in VOC emissions which, in the aggregate, contribute significantly to California's serious air quality problems in which ozone and PM10 are the most intractable. VOCs are precursors to both ozone and PM10, which are formed through complex reactions of nitrogen oxides and VOCs in sunlight. Ozone and PM10 are both strong respiratory irritants and impair the normal functioning of the lungs.

The Board's current emission inventory indicates that VOC emissions from all consumer products are approximately 200 tons per day in California. This amount represents approximately 30 percent of all VOC emissions from all solvent use sources in California. Traditionally, the ARB has

concentrated its efforts on controlling motor vehicles and industrial sources of air pollution, thereby neglecting such smaller sources as consumer products. As California's population has grown, the emissions from consumer products have also grown substantially. We are now approaching the technological limits for achieving emissions reductions from motor vehicles and large industrial sources, yet California's air quality problem is still very serious. For this reason, the ARB can no longer afford to ignore controls on consumer products; especially since controlling these consumer products is in the same range of cost-effectiveness as other VOC measures that the Board has approved (e.g., from less than \$0.01 to a cost of \$1.10 per pound of VOC emissions reduced).

The ARB strongly believes that the additional emissions reductions resulting from the proposed amendments will help to further improve air quality in California. The amendments are a necessary step in the efforts to further control emissions from consumer products and implement the mandate of Health and Safety Code section 41712.

Overall, the ARB estimates that the emissions of VOCs from the products being proposed for Phase II regulation are approximately 29 tons a day statewide. The amendments would reduce the volatile organic compound emissions to approximately 21 tons per day, which would essentially achieve a 28 percent control efficiency. Because consumer products are widely distributed products whose use is directly proportional to the population in any given area, the greatest VOC reductions will occur in areas with the largest population. Therefore, most emission reductions from the proposed regulatory action will occur in urban areas where they are most needed to reduce both ozone and PM10.

III. MODIFICATIONS MADE TO THE CONSUMER PRODUCTS AND ANTIPERSPIRANTS AND DEODORANTS REGULATIONS

A. Modifications approved by the Air Resources Board for the consumer products regulation

Various modifications to the original proposal were made in order to address the comments of industry representatives, the public, environmental groups, and government agencies. These modifications are described below.

1. Section 94508. Definitions. A number of the definitions contained in section 94508 were modified. Definitions were also added for the terms "Construction and Panel Adhesive", "Contact Adhesive", and "General Purpose Adhesive." The definitions for "Aftershave", "Antiperspirant", "Body Splash", "Cologne", "Deodorant", "Hand Dishwashing Detergent", "Laundry Detergent", "Perfume", "Shaving Gel", and "Toilet Water" were deleted. These modifications were made in order to clarify the language of the regulation and more accurately define the scope of each consumer product category.

2. Section 94509. Standards for Consumer Products. The following modifications were made to section 94509:

Section 94509(a). Changes were made to some of the originally proposed VOC standards and effective dates specified in the Table of Standards. The modifications affect the product categories (and accompanying subcategories) of "automotive brake cleaners", "carburetor-choke cleaners", "household adhesives", "insecticides", and "personal fragrance products". For "personal fragrance products", the modified standards are based on the fragrance content of products instead of the originally proposed standards based on different definitional subcategories of personal fragrance products. This modification was made to allow greater flexibility to industry in complying with the standards, and to avoid definitional problems in

clearly distinguishing the boundaries of each product subcategory. In addition, the categories of "disinfectants" and "hand dishwashing detergents" were deleted in order to allow additional study of issues raised by commenters on the proposed standards.

Section 94509(b). Section 94509(b) was modified to delete the reference to hand dishwashing detergents.

Section 94509(c). The original proposal provided for a "sell-through" period of one year for any product manufactured prior to the initial effective date specified for that product in the Table of Standards. Section 94509(c) was modified to allow for an 18-month "sell-through" period. In addition, the 18-month sell-through period was made applicable to products manufactured prior to both the initial effective date and any future effective date specified for each product category.

Section 94509(h). The original proposal set forth certification standards and procedures for charcoal lighter material. Section 94509(h) was modified in order to clarify and add greater specificity to the certification procedures, and to set forth procedures for revocation of certification. In addition, the certification standard was changed from 0.02 to 0.020 pound of VOC emissions per start. Finally, section 94509(h) was modified to include an eighteen month "sell-through" period for charcoal lighter material products sold, supplied, or offered for sale in all areas of California except the South Coast Air Quality Management District (SCAQMD). As explained on pages V.29 and V.30 of the Technical Support Document, a sell-through period was not provided for products sold in the SCAQMD in order to ensure consistency with SCAQMD Rule 1174.

3. Section 94510. Exemptions. A new exemption was added for bait station insecticides [section 94510(1)], and modifications were made to better define the scope of the exemptions for products containing

paradichlorobenzene [section 94510(g)] and for small containers of adhesives [section 94510(i)]. The proposed one percent by weight fragrance exemption [section 94510(c)] was also raised to two percent.

In addition, the originally proposed exemption for existing personal fragrance products [section 94510(h)] was modified in a number of ways. The exemption was expanded to include both existing products and products "in development" on or before April 1, 1992, provided that such products are registered prior to July 1, 1993, and are sold in California before January 1, 1994. This "grandfather" clause allows the unique scent and characteristic of all existing products to be retained, and also provides a reasonable way to protect the economic investment of manufacturers who are far along in the process of developing new products. Provisions were included to allow manufacturers to register products "in development" under hypothetical trade names or pseudonyms, in order to protect sensitive marketing information from public disclosure. It was also specified in section 94510(1) that the 1/1/99 VOC limits for personal fragrance products do not apply to products which have been sold in California prior to 1/1/99. This provision clarifies that the "grandfather" exemption for personal fragrance products will be applicable to products sold prior to the 1/1/99 future effective date. Finally, it was provided in section 94510(j) that the VOC standards specified in section 94509(a) do not apply to any VOC which is a fragrance in a personal fragrance product. This last modification was a technical change necessary to implement the modified VOC standards for personal fragrance products, which are set at differing VOC levels depending on the percentage of fragrance contained in a product.

4. Section 94511. Innovative Products. The intent of section 94511(a) was clarified by inserting the term "VOC" before the word "emissions" at several places in the section. In addition, section 94511(i) was modified to more clearly specify the procedures by which innovative products exemptions may be modified or revoked.

5. Section 94512. Administrative Requirements. Section 94512(a) was modified to provide that the "most restrictive limit" requirement is applicable only to representations made on a product's principal display panel. Under the modified language, the provisions of section 94512(a) would not apply to representations made on other parts of the product container or packaging.

In addition, section 94512 was modified to delay the start of the code-dating requirements until twelve months prior to the effective date of the applicable VOC standard. Section 94512(b) was also modified to provide that the "Code-Dating" requirement does not apply to small samples of personal fragrance products which are distributed to consumers free of charge. (Many of these samples are too small to feasibly allow a code-date to be displayed.)

6. Section 94513. Registration. The original proposal required certain types of consumer product information to be reported to the Executive Officer at three year intervals. Modifications were made to these requirements. These modifications include the deletion of the three year registration intervals [section 94513(a)], the addition of a provision that requires product labels to be submitted only upon request by the Executive Officer [section 94513(a)(3)], and modifications in the categories of information to be reported. The latter modifications were made in response to industry concerns that some of the required information was unnecessary or too burdensome to compile. To allow the enforcement of the modified standards for personal fragrance products, additional information on these products was also required to be reported under this section.

7. Section 94514. Variances. Section 94514(b) was modified to provide that information submitted by a variance applicant may be claimed as confidential and will be handled in accordance with ARB confidentiality procedures. In addition, it was specified that confidential information may be considered by the Executive Officer in reaching a decision on a variance application. These modification will allow the variance provisions to be

more useful to applicants who might otherwise not apply for a variance due to concerns about the disclosure of confidential information to competitors.

8. Section 94515, Test Methods. The original proposal provided that if there exists a discrepancy between testing results and accurate manufacturer records in demonstrating product compliance, the testing results may be used to establish a regulatory violation. Section 94515(b) was modified to delete this language. In addition, a new section 94515(f) was added to specify a test method for determining the percentage by weight of fragrance in personal fragrance products. This modification will allow for the enforcement of the modified VOC standards for personal fragrance products.

9. In addition to the modifications described above, various other clarifications and grammatical modifications were also made to the language of the consumer products regulation.

B. Modifications approved by the Air Resources Board for the antiperspirants and deodorants regulation

Prior to the original proposal, sections 94503.5 (Innovative Products), 94505 (Variances), and 94506 (Test Methods) of the antiperspirant regulation were essentially identical to sections 94511, 94514, and 94515 in the consumer products regulation. The original proposal included amendments to the Innovative Products and Test Methods sections of the consumer products regulation and, to maintain consistency, the same amendments were also proposed to the corresponding sections of the antiperspirant regulation.

Additional modifications were made to the Innovative Products, Variances, and Test Methods sections of the consumer products regulation (sections 94511, 94514, and 94515). These additional modifications are described in the section III(A) of this Final Statement of Reasons. To maintain consistency, the same modifications have also been made to the

corresponding sections 94503.5, 94505, and 94506 of the antiperspirant regulation. It should be noted that there remain unavoidable minor differences between the corresponding sections of the two regulations due to different section numbering and varying regulatory requirements. (e.g., some of the consumer products test methods were not included in the antiperspirant regulation because they were not relevant to the regulatory determinations that will be made for antiperspirants and deodorants.)

Two other modifications were also made to maintain consistency between the two regulations. Section 94502 of the antiperspirant regulation was modified to include the same eighteen month "sell-through" periods that are allowed in the consumer products regulation. The definition of "volatile organic compound" in section 94501 was also modified to read the same in both regulations. In addition to the modifications described above, various other nonsubstantial or grammatical modifications were also made to the antiperspirant regulation.

IV. SUMMARY OF COMMENTS AND AGENCY RESPONSES

The Board received numerous written and oral comments, both in connection with the January 9, 1992 hearing and during the subsequent 15-day comment periods.

A list of commenters is set forth below, identifying the date and form of all comments that were timely filed. Following the list is a summary of each objection or recommendation made regarding the specific adoption and amendments proposed, together with an explanation of how the proposed action has been changed to accommodate the objection or recommendation, or the reasons for making no change. A number of commenters expressed general support or disagreement with the regulation or certain aspects of it, but did not suggest that the Board take any specific action. While these comments were considered by the Board, most of these comments are not separately addressed in this Final Statement of Reasons because they were not objections or recommendations specifically directed at the proposed

action or the procedures followed by the Board in proposing or adopting the proposed action. However, some of these comments have been included in those cases where they add additional information or perspective on the actions taken by the Board.

It should also be noted that a number of the following commenters repeat comments that were originally made during the antiperspirant or Phase I consumer products rulemakings. Where appropriate, these earlier comments are referenced in the ARB's responses. Copies of the antiperspirant and Phase I Final Statement of Reasons have been attached as Appendices A and B to this Phase II Final Statement, for ease of reference.

Finally, this Final Statement of Reasons does not address comments on the VOC standards and effective dates for the consumer product categories that were regulated as part of the 1991 Phase I rulemaking. As stated in the 45-day notice (page 4) for the current Phase II rulemaking, these Phase I issues are beyond the scope of the Phase II rulemaking action.

- 3M R. H. Norris, Adhesive Systems
 3M General Offices
 Written testimony: November 11, 1991
- 3M Dan Knuth
 3M General Offices
 Oral testimony: January 9, 1992
- ACMC Howard L. Cook, Group Administrator
 Automotive Chemical Manufacturers Council
 Written testimony: January 3, 1992
- AHFP Daniel M. Adams, Vice President - Technical
 American Home Food Products, Inc.
 Written testimony: December 20, 1991
 December 26, 1991

January 8, 1992

AHPC Anthony E. Anzalone, Senior Attorney
American Home Products Corporation
Written testimony: January 8, 1992
Oral testimony: January 9, 1992

AP Thomas W. Dann, Director of Research & Development
Accra Pac, Inc.
Written testimony: December 28, 1991

AT Art Torres, Senator, Chairman, Senate Committee on Toxics
and Public Safety Management
California Legislature
Written testimony: January 7, 1992

BAAQMD Milton Feldstein, Air Pollution Control Officer
Bay Area Air Quality Management District
Written testimony: January 3, 1992

BJ Bill Jones, Assemblyman, Thirty-Second District
Assembly, California Legislature
Written Testimony: December 12, 1991

BP Maurice Blankenship, Vice President/General Manager
Berryman Products, Inc.
Written testimony: December 9, 1991
January 8, 1992

CC Timothy J. Kennedy, Research Associate
Clorox Company
Written testimony: October 28, 1991
November 15, 1991
November 22, 1991

December 2, 1991

January 7, 1992

January 8, 1992

April 27, 1992

Oral testimony: January 9, 1992

CCCO

Margaret Tilka, Legislative and State Affairs

Chevron Chemical Company, Ortho

Written testimony: March 30, 1992

CI

Gary L. Ouellette, President/CEO

Cyclo Industries, Inc.

Written testimony: December 9, 1991

January 7, 1992

January 8, 1992

Oral testimony: January 9, 1992

CP

Clarence P. Clapp, President

Creative Products, Inc.

Written testimony: January 8, 1992

CPA

R. Bruce Dickson, Counsel

Paul, Hastings, Janofsky & Walker representing

Chlorobenzene Producers Association

Written testimony: December 5, 1991

CRC

Allen B. Reed, Vice President - Research & Technical
Services

CRC Industries, Inc.

Written testimony: November 22, 1991

CRC

Gene Fleishman, President

CRC Industries, Inc.

Written testimony: December 17, 1991

CSMA

Ralph Engel, President
Chemical Specialties Manufacturers Association
Written testimony: December 27, 1991
January 7, 1992
January 9, 1992
April 30, 1992
Oral testimony: January 9, 1992

CTFA

Thomas J. Donegan, Jr., Vice President & General Counsel
The Cosmetic, Toiletry, and Fragrance Association
Written testimony: January 9, 1992
April 30, 1992
Oral testimony: January 9, 1992

EHN

Barry Karr, Board President
Environmental Health Network
Written testimony: January 9, 1992
April 25, 1992
Oral testimony: January 9, 1992

EHN

Susan R. Molloy
Environmental Health Network
Written testimony: April 23, 1992

EHN

Milan Param
Environmental Health Network
Oral testimony: January 9, 1992

EPA

Esther Hill, Chief
Northern CA, NV & HI Rulemaking Section
Air and Toxics Division
United States Environmental Protection Agency
Written testimony: December 4, 1991

FB F. E. Schrage, Director of Legislative & Regulatory Affairs
First Brands Corporation
Written testimony: January 8, 1992

FMA John B. Hallagan
Fragrance Materials Association of the United States
Written testimony: November 20, 1991
Oral testimony: January 9, 1992

FSBA Adrian J. Hampshire, Chairman
Faultless Starch/Bon Ami Company
Written testimony: December 30, 1991

GEC Mike S. Profetto, Director of Technical Services
Gold Eagle Company
Written testimony: December 11, 1991
December 12, 1991

GLS Dr. and Mrs. Gary L. Stevens
Written testimony: August 21, 1992

GM Samuel A. Leonard, Director, Automotive Emission Control
General Motors Corporation
Written testimony: October 28, 1991

HC Bruce Varner
Helene Curtis, Inc.
Written testimony: December 27, 1991

HH Dr. Sandra Ross, President
Health & Habitat
Written testimony: April 25, 1992

HI Al Howarth, Vice President Sales

Hydrosol, Inc.

Written testimony: November 14, 1991
January 8, 1992

JBA

Leslie S. Spahn, Counsel
SRJ. Jackson, Barish & Associates representing FMA
Written testimony: November 20, 1991

L&F

Lehn & Fink Products Group
Written testimony: November 1, 1991
January 1, 1992
January 9, 1992

LLI

I. Lynwood Kanin, President
Lynwood Laboratories, Inc.
Written testimony: August 19, 1992

LM

James Mattesich, Counsel
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Written testimony: January 3, 1992

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Written testimony: May 1, 1992

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Written testimony: April 6, 1992

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Motor Equipment Manufacturers Association
Oral testimony: January 9, 1992

MGK George Zeller
McLaughlin Gormley King Company
Oral testimony: January 9, 1992

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Written testimony: January 8, 1992

NOW James G. Edwards, President
NOW
Written testimony: January 9, 1992

PG Michael J. Irwin, Group Leader, Professional and Regulatory
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The Procter & Gamble Company
Written testimony: December 17, 1991

PG Robert A. Jamieson, PH.D., Manager, Professional and
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The Procter & Gamble Company
Written testimony: January 6, 1992

PG Philip A. Geis, Ph.D, Professional & Regulatory Services
The Procter & Gamble Company
Written testimony: April 23, 1992

PHJW R. Bruce Dickson, Counsel
Paul, Hastings, Janofsky & Walker representing
Chlorobenzene Producers Association
Written testimony: November 18, 1991

RC Richard Conrad, Ph.D.
Written testimony: April 29, 1992

RCH Eileen Moyer
Reckitt and Colman Household
Oral testimony: January 9, 1992

RSC Alan Blumenthal, President
Radiator Specialty Company
Written testimony: January 8, 1992

SCAQMD Elaine Chang, DrPH
South Coast Air Quality Management District
Written testimony: January 9, 1992
Oral testimony: January 9, 1992

SCC Bonnie Holmes
Sierra Club California
Oral testimony: January 9, 1992

SDA Richard Sedlak, Technical Director
The Soap and Detergent Association
Written testimony: December 20, 1991
January 8, 1992
April 24, 1992

SMAQMD Norm Covell, Air Pollution Control Officer
Sacramento Metropolitan Air Quality Management District
Written testimony: January 9, 1992

TAG Bruce P. Howard, Counsel
The Aerosol Group
Written testimony: January 8, 1992
April 29, 1992
August 31, 1992
Oral testimony: January 9, 1992

TCC Larry Easterlin, Marketing Director
 Technical Chemical Company
 Written testimony: December 10, 1991

TCLP Bruce Bennett
 Technical Concepts L.P.
 Written testimony: October 25, 1991

A. Administrative Requirements

1. Comment: There is no reason to require code dating prior to the effective date of an applicable standard and no reason to require the explanation of codes which already exist on products included in the regulation. Both of these requirements should apply once the standard is applicable, not before.

The effective date of the code-dating requirement [section 94512(b)] should be modified. Instead of becoming effective within three months of the effective date of the regulation, the code-dating requirement should instead be implemented within three months of the effective dates of the VOC standards. This brings the dates of the compliance for the code dating requirements in alignment with the effective dates of the limits in the Table of Standards. (PG, SDA)

Agency Response: We do not agree that the code-dating requirements should be delayed until the effective date of each VOC standard. It is crucial that manufacturers begin to code-date their products well in advance of each standard's effective date, because products take time to move through the distribution system to be sold to the ultimate consumer. (This is why the regulation contains a sell-through provision (section 94509(c)). Products must be code-dated in advance of a standard's effective date in order to determine whether or not a product qualifies for the sell-through, and to protect retailers and distributors from being cited for regulatory violations simply because the date on which a product was manufactured

cannot be determined. Similarly, it is necessary that an explanation of each code be provided to ARB staff in order to adequately plan enforcement strategies and monitor the distribution of products in the market place.

In response to industry concerns, however, section 94512(b) was modified to provide that manufacturers are not required to meet the coding requirements until 12 months prior to the effective date of the standards. This one-year period will lessen any regulatory burden on manufacturers and will allow the overwhelming majority of the products to move through the distribution system. While there are some products that may take longer than one year to be sold at the retail level, manufacturers who believe this is a problem for their products may choose to begin coding these products earlier than the required one-year period.

2. Comment: The "Most Restrictive Limit," section 94512(a), should be deleted. A product fits best into one, and only one category and should be regulated as part of that category. Depending on how it is interpreted, it may penalize products with multiple functions. (PG, SDA, CSMA)

Agency Response: The "Most Restrictive Limit" Provision (section 94512(a)) was adopted as part of the Phase I rulemaking. As explained in the Phase I Final Statement of Reasons (response to Comment 117), the purpose of section 94514(a) is to ensure that manufacturers cannot circumvent the specified VOC limits simply by displaying a product label which purports to place the product in an unregulated or lower VOC category. For example, an aerosol product could state that it was a glass cleaner or "principally" intended to be used as a glass cleaner, but also worked well as a bathroom and tile cleaner. While the VOC limit for aerosol glass cleaners is 12 percent, the limit for bathroom and tile cleaners is only 5 percent. Without the provisions of section 94512(a), unscrupulous manufacturers might circumvent the regulation and achieve a competitive advantage over manufacturers who more accurately label their products.

While we believe that the "Most Restrictive Limit" Provision is important to the regulatory scheme for consumer products, section 94512(a) was modified in response to the industry's concern about "fairness" for multiple function products. As modified, section 94512(a) provides that only the representations made on the "principal display panel" will be used to determine the applicable standard. This is a substantial change when compared to the original language, which provided that representations appearing "anywhere on the container...any sticker, or label, packaging, or literature attached..." would be considered to determine the applicable standard. The modified language will focus the determination on the product's primary functions, which are most likely to appear on the principal display panel. We believe that this modification "levels the playing field" for industry, without allowing circumvention of the regulation.

3. Comment: We propose two alternatives to ARB staff regarding the "Most Restrictive Limit": (a) that the "Most Restrictive Limit", section 94512(a), be deleted, and categorization be based on the category that "best describes" the function and use of the product as reported in registering the product pursuant to section 94513(a)(2), (b) if the ARB is concerned that products may be developed that fit equally well into two or more categories, section 94512(a) could be revised to read as follows:

"Notwithstanding the definition of product category in section 94508, if anywhere on the principal display panel of any consumer product any representation is made that the product may be used as, or is suitable for use as a consumer product for which a lower VOC standard is specified in section 94509(a), then the lowest VOC standard shall apply. This requirement does not apply to general purpose cleaners." (CSMA)

Agency Response: As explained in response to the previous comment, we believe that it is important to retain the "Most Restrictive Limit" provision in the regulations. However, we agree that the commenter's second

proposed option improves the usefulness of the provision, and section 94512(a) has been modified to include the suggested language.

B. Definitions

4. Comment: The definition of disinfectant is ambiguous and may include other antimicrobial products, such as sanitizers. The current definition implies that ARB intends to make judgments regarding whether products are disinfectants independent of the decisions made under FIFRA. The definition of disinfectant should be modified to read as follows:

"Disinfectant means any product intended to destroy or irreversibly inactivate infectious or other undesirable bacteria, pathogenic fungi, or viruses on surfaces or inanimate objects, and whose label is registered as a disinfectant under the Federal Insecticide Fungicide, and Rodenticide Act (FIFRA, 7 U.S.C. 136, et seq)". (CSMA)

Agency Response: We do not agree that the definition for "disinfectant" is ambiguous. In fact, the definition (section 94508(23)) is clearer and more specific than the commenter's suggested language, in that the ARB definition includes all of the suggested language, plus additional language to exclude many products that are not used primarily as hard-surface disinfectants that are the focus of regulatory concern. This additional language is designed only to exclude specific types of products for the purposes of this regulation, and it is not stated or implied that the ARB can make judgements about whether or not products are disinfectants under the provisions of FIFRA.

5. Comment: The addition of the word "exclusively" in the definition of "flea and tick insecticide" would have the effect of regulating products designed for use on both animals as well as an animal's bedding or elsewhere. ARB's consumer products survey did not include flea and tick products that are labeled for use on pets or other animals. The word "exclusively" should be deleted from the definition or the definition should

be made more consistent with that used in the 1991 ARB survey by adding the phrase, "and their bedding areas" at the end of this definition. (CSMA)

Agency Response: As suggested by the commenter, the definition for "flea and tick insecticide" has been modified to add the phrase "and their bedding" to the end of the definition. This modification will insure that the definition is consistent with the types of products included in the 1991 ARB survey. It is not appropriate to add the additional word "areas", however (e.g. "...and their bedding areas...") because the additional word could be construed to exclude a broad range of flea and tick insecticides that are intended to be covered by the regulatory standards.

6. Comment: In the flying bug insecticide definition, wasp and hornet products should be specifically excluded from this product category, since they have been given their own category. The subcategory is alternatively referenced as "flying bug insecticide" and "flying insect insecticide". The former term should be used. (CSMA)

Agency Response: We agree with the commenter and have incorporated both of the suggested modifications in the definition of "flying bug insecticide."

7. Comment: The final sentence of the definition of "general purpose cleaner" should be deleted. The exclusions listed in this sentence are not appropriate because they are not consistent with the definition used in ARB's consumer product survey and would exclude from this category products that are clearly cleaners meant to be used on various different surfaces for various different tasks. The definition should also be modified to make it clear that degreasers are not considered to be general purpose cleaners. (CSMA, SDA)

Agency Response: The final sentence of the definition of "general purpose cleaner" was deleted as suggested by the commenter. The commenter also suggests that the definition be modified to make it clear that

degreasers are not considered to be general purpose cleaners. This modification is not necessary because the definition already makes it clear that general purpose cleaners are cleaners designed for general, all-purpose cleaning, as opposed to specialized cleaners such as degreasers. The number of specialized cleaners, is too extensive to list as individual products exempt from the definition.

8. Comment: In the definition of "insect repellent", the term "insecticide" should be replaced by the term "pesticide" since insect repellents are often not considered by many in the trade to be "insecticides" (i.e., insect killers), which could result in some confusion. (CSMA)

Agency Response: The definition of "insect repellent" has been modified as suggested by the commenter.

9. Comment: The definition of "insecticide" should exclude "products designed for application on humans or animals" as in ARB's 1991 consumer product survey. Although most products designed to be applied to animals are flea and tick products (with a separate definition) or agricultural products (which are exempt from the VOC limits), some are not. (CSMA)

Agency Response: It is not necessary to modify the definition for "insecticide" as suggested by the commenter, because the exclusion of products designed for application on humans or animals is incorporated in the definition for each individual insecticide subcategory. Language that explicitly states this exclusion is contained in the "crawling bug insecticide", "flea and tick insecticide", and "flying bug insecticide" definitions. The definitions for "insecticide fogger", "lawn and garden insecticide", and "wasp and hornet insecticide" state that these products have very specific uses that do not include applications on humans or animals.

10. Comment: The definition of label differs from the current definition of label found in the California Fair Packaging and Labeling Act (CAFPLA), section 12614, Definitions, Weights and Measures, Division 5. We recommend that the ARB adopt a definition that is consistent with CAFPLA, which reads as follows:

"Label means any written, printed, or graphic matter affixed to any commodity or affixed to or appearing upon any package containing any commodity." (CSMA)

Agency Response: It is not necessary to change the definition of "label". The definition of "label" in the regulation was closely modeled after the definition found in Title 4, California Code of Regulations, section 4512(b). We believe that this is a better definition because it more explicitly applies to the wide variety of graphic materials that would properly be viewed as "labels" in the customary usage of this term. There is no reason to use the CAFPLA definition when a better one is available.

11. Comment: Defining "manufacturer" to include any person who "imports, manufactures, assembles, produces, packages, repackages, or relabels a consumer product" would mean that a consumer product would often have numerous manufacturers. We suggest that the definition for "responsible party" in section 94508 be used to define who will be considered a "manufacturer", since that would result in only one manufacturer per product. Only the "responsible party" should be considered a "manufacturer" as the term is used in the applicability statement in section 94507. (CSMA)

Agency Response: It is not necessary to change the definition of "manufacturer." Multiple parties are sometimes involved in the process of "manufacturing" a product. It would not be equitable to arbitrarily select one "responsible party" when there may be multiple parties responsible for a regulatory violation. However, it is appropriate to select a "responsible party" to allocate the responsibility for survey and registration reporting

because having only one "responsible party" streamlines the reporting process and prevents the submission of duplicate data.

12. Comment: The definition of "principal display panel or panels" should be made to be consistent with the existing definition of "principal display panel" pertaining to consumer products (section 26027, Food, Drug and Cosmetic Law, Division 21). Accordingly, the definition should be revised to read:

"Principal Display Panel means that part of a label which is most likely to be displayed, presented, shown, or examined under normal and customary conditions of display for retail sale." (CSMA)

Agency Response: It is not necessary to change the definition. The definition of "principal display panel or panels" in the regulation was modeled after the definition found in Title 4, California Code of Regulations, section 4512(c). This is a better definition because it addresses situations where it could fairly be said that there is more than one "principal display panel" associated with a product.

13. Comment: In the definition of "Product Category", the phrase "for the purpose of complying with section 94513 only" should be deleted. This provision would result in some products being registered under one category, but subject to the VOC limitation of another category or subcategory of products. We recommend the following:

"Product Category means the applicable category which best describes the product as listed in section 94508." (CSMA)

Agency Response: The definition of "product category" has been modified as suggested by the commenter.

14. Comment: The definition of "Laundry Detergent" should be removed since this category is not proposed for regulation. (PG, SDA)

Agency Response: The definition of "laundry detergent" has been deleted.

C. Economic Impacts of the Regulation

15. Comment: We do not agree that the impact of this regulation on upstream suppliers should be "minimal" as stated in the TSD. In specific instances, the economic effects on suppliers may be far more severe than for the product manufacturers in the same product category. (CSMA)

Agency Response: We disagree with the commenter's assertion that the regulation will have a severe impact on upstream suppliers. As discussed on page VI.1 of the TSD, ARB staff understood that the regulation would impact suppliers as well as manufacturers and consumers. However, ARB staff concluded that in most cases the impact to upstream suppliers of containers, solvents, propellants and other chemicals will be minimal. ARB staff expects that most impacts will primarily be the type of demand shifts that frequently occur in a supplier's business (i.e., a shift in the demand from one chemical to another chemical or from type of container to another type). ARB staff also received no cost information which would indicate that additional costs to suppliers and distributors would be severe.

16. Comment: It is not valid to assume that there would be little cost to product distributors as stated in the TSD. The difficult problems faced by these businesses would include: (a) determining which products fit the complex technical definition for the various categories, (b) determining the date of manufacture of various products based on the manufacturer's code date and (c) collecting noncomplying products for shipment out of state. This regulation, as proposed with a one year sell-through period (and no sell-through for several products), would present extensive, costly and logistically complex problems for distributors and retailers seeking to comply with its prohibitions on the sale of various consumer products by various dates. (CSMA)

Agency Response: We disagree with the commenters claim that the regulation will be overly burdensome on distributors and retailers. As stated in the response to the previous comment, ARB staff expects the impact on product distributors and retailers to be a change in the type of individual products being handled, and not a change in overall demand. Since 1990, ARB staff has worked extensively with manufacturers of consumer products, and has also kept distributors and retailers informed of the regulatory developments. ARB staff expects that manufacturers will assist distributors and retailers in determining the applicability of the VOC standards and definitions for each product line. ARB staff also believes that manufacturers will wish to keep good relationships with their distributors and retailers, and will assume responsibility to ensure that noncomplying products are not shipped to California. Given the 18-month sell-through period that has been adopted by the Board, and the fact that the ARB staff is putting great effort in informing distributors and retailers of the regulatory requirements, the probability of a product recall or market disruption is unlikely - particularly in light of the fact that a large percentage of the market already complies with many of the proposed standards. In the event of a recall, however, distributors and retailers have had previous experience in recalling specific products. ARB Staff does not expect this situation to be any different, except that industry will know much further in advance about the need for product recalls. Therefore, staff believes that any shipment of noncomplying products out of state will be minimal and will not present a significant economic impact.

17. Comment: It is very simplistic to assume that all of the products affected by this regulation will be marketed nationally as stated in the TSD. Many minor brands, small private label products, and institutional products, are sold regionally. These represent only a minor percentage of the market for most product categories, but for some, such as windshield washer fluids and many categories of industrial and institutional products, small regional brands predominate. (CSMA)

Agency Response: Clarification of the assumption in the TSD is necessary. ARB staff assumed that national marketers will sell their reformulated products on a national basis. This assumption applies to national marketers only (which in fact represent the vast majority of the market). For regional manufacturers, ARB staff does not expect the reformulated products to be sold nationally. ARB staff believes that these assumptions are reasonable and are consistent with current marketing patterns in the consumer products industry.

18. Comment: We believe that it is important to note that the annual costs reported in the TSD (as calculated in Appendix D) take into account only the costs of reformulating noncomplying products, and do not take into account many of the related provisions of this regulation that will have compliance costs associated with them. Among those other provisions for which there will be significant compliance costs are:

- (a) section 94509(c), which would require significant efforts by manufacturers, distributors and retailers to recall noncomplying products from the channels of trade;
- (b) the requirement for vapor pressure data to prove LVP Compound status for organic solids;
- (c) section 94511 submissions to obtain innovative product exemptions;
- (d) section 94512(a), which could require labeling revisions to avoid triggering "most restrictive limit" provisions;
- (e) the registration of products under section 94513;
- (f) the addition of or modification to code dating to comply with section 94512(b);

- (g) the application for variances under section 94514, which could be commonly required for FIFRA-registered products that encounter delays in registration; and
- (h) section 94515, which requires the retention of manufacturing records. (CSMA)

Agency Response: During the development of the regulatory cost analysis, CSMA and industry had the opportunity to submit cost data on reformulating products. Very little information was submitted by industry. In analyzing the economic impact from the regulation, staff did, however, consider the many related costs mentioned by the commenter and concluded that these costs will not have a serious economic impact on industry, due to the following reasons:

- (a) As fully discussed in the response to Comment 16, ARB staff believes that any recall of noncomplying products will be minimal.
- (b) Many of the compounds used in consumer products have published vapor pressures that are readily available. However, for those compounds with unknown vapor pressures, the regulation allows manufacturers to use carbon number as an alternate method of determining status as a low vapor pressure compound (see section 94510(d)). Most manufacturers will easily be able to obtain information from their chemists who have a strong technical background and are intimately familiar with product ingredients.
- (c) The innovative products provision was designed to provide an option for companies who choose to use this approach. The decision to apply for an innovative product exemption is completely voluntary, and is not necessary if the product meets the applicable VOC standards.

- (d) The cost of modifying the label has been included in the cost of labeling modification as discussed on page VI.2 of the TSD, and shown in Table D-6, Table D-7, and Table D-8 of the Appendices. In addition, section 94512(a) was modified to minimize the impact on industry. (See the response to Comment 2).
- (e) In response to manufacturers' comments, the regulation has been amended to delete the requirement that products subject to the rule be registered every three years. Companies which have already submitted information do not have any additional obligation to submit data unless specifically requested to do so by the ARB. Even so, the cost of registering a product to meet applicable regulations is included on page VI.2 of the TSD, and in Table D-6, Table D-7, and Table D-8 of the Appendices.
- (f) The cost of adding or modifying the code date to comply with section 94512(b) is included in the cost of labeling modification as discussed on page VI.2 of the TSD, and shown in Table D-6, Table D-7, and Table D-8 of the Appendices. In addition, many consumer products already display code-dates and would need little or no labeling changes.
- (g) As with the Innovative Product Provision, the regulation does not require manufacturers to apply for variances. The variance procedure is an alternative given to manufacturers who have difficulty in complying with the VOC standards. If the standards are met, there will be no additional cost for obtaining a variance. In addition, an extra year has been provided to allow re-registration of FIFRA products (section 94509(d)).
- (h) Since manufacturers routinely maintain production records for a variety of reasons, staff does not believe that section 94515 places any additional significant burden on industry. In addition, section 94515 does not require that manufacturers keep

production records; this section merely allows an alternative way to demonstrate compliance with the requirements of the regulation for those manufacturers who maintain adequate records.

19. Comment: The assessment of the economic impacts on small businesses in the TSD totally ignores the primary potential impact: small retailers and distributors seeking to identify and return products before the one-year sell-through deadline(s) that would be created by this regulation. Thousands of man-hours per facility could be required to search through the tens of thousands of products that could be in the facility, and identify those that are banned from sale, and seek to move them out of the channels of trade in California. (CSMA)

Agency Response: ARB staff believes that the impact to small retailers and distributors will be minimal. Checking inventory is a normal part of business for distributors and retailers. To ensure that there will be time to clear inventories of noncomplying products, the one-year sell-through period was increased to 18 months. The results of our survey show that approximately 90 percent of the products are sold within one year. Increasing the sell-through period to 18 months means that approximately 3 percent of all products will remain on the shelves more than 18 months after the date of manufacture. In addition, many products on the market already comply with the standards. For those products which do not comply, manufacturers are committed to working with retailers and distributors to help ensure that only complying products remain on the shelves.

Finally, ARB staff is taking steps to assist businesses with this issue. Staff has mailed out notices to numerous businesses explaining the requirements of the regulation to ensure that the impact to distributors and retailers is minimal. Further discussion of the "sell-through" issue can be found in the responses to Comments 86-100.

20. Comment: The per product reformulation costs listed in Table D-1, which range from \$76,000 to \$1,100,000, tend to slightly underestimate the

total costs of product reformulation. Few reformulations can be accomplished for less than \$100,000, while many products will require as much as \$2,000,000 per product, even if only research and development, efficacy testing, stability testing, safety testing and modifications to labels are considered. However, other costs must be taken into account as well, including consumer evaluation (internal and external), packaging tests, patent evaluation, production equipment modifications and production trials. (CSMA)

Agency Response: ARB staff believes that the cost to reformulate the vast majority of noncomplying products will range between \$76,000 and \$1,100,000. This is not to say that the cost to reformulate some products may fall outside this range; however, the majority of product reformulations will be within this range. While it is possible that some products may cost more than \$1,100,000, ARB staff also believes that many products which are already very close to the standard will require less than \$76,000 to reformulate. Costs identified by the commenter such as consumer evaluation, packaging tests, and patent evaluation were not individually cited in the cost analysis. However, these costs were included in the cost analysis under other terms. For example, consumer evaluation cost is included in the analysis under efficacy testing while packaging test cost is included under product development. During the development of the regulation, ARB staff solicited comments from industry on the potential impacts of the regulation. The cost analysis in the Technical Support Document includes the information received from industry.

21. Comment: We believe that ARB's range of estimates (calculated in Table D-3) for total industry cost may significantly understate the total costs of this regulation. ARB's calculation is based on 1,879 "noncomplying products" being reported in the ARB survey. But many of the products currently in compliance will have to be reformulated as well, in cases where they contain 1,1,1-trichloroethane, and most or all of the R&D expense will be incurred seeking to lower the VOC content or seeking innovative product status in order to comply with this regulation. (CSMA)

Agency Response: The phase-out of 1,1,1-trichloroethane will occur as a result of the Montreal Protocol and federal Clean Air Act Amendments. Staff did not include the cost to reformulate products containing 1,1,1-trichloroethane because these products will have to be reformulated anyway. With regard to the commenter's speculation that this reformulation will cost more as a result of the ARB regulations, it should be noted that emission reductions which will occur from reformulating products containing 1,1,1-trichloroethane with non-VOCs to meet the ARB standards were also not included in the ARB's cost-effectiveness calculations. Therefore, ARB staff expects that no significant impact on the cost effectiveness ratio would result from including the cost of phasing out 1,1,1-trichloroethane.

22. Comment: It is our best estimate that at least 4,000 to 5,000, not 1,879, noncomplying products are currently sold in California which meet the definitions for one or more of the categories of products proposed for regulation in Phase II, and total costs to the industry would therefore be at least two to three times that calculated in Table D-3 (\$20,600,000 to \$205,000,000 per year over five years). The increase in total cost would increase the cost per pound of VOC emissions reduced. The actual cost effectiveness, due to the higher range of costs, would be more accurately calculated to be at least two to three times that calculated in Table D-5, even if it is assumed that the emissions reductions estimates will actually occur. (CSMA)

Agency Response: The number of noncomplying products was derived from the survey information submitted by industry. It is the most accurate available information. If this number underestimates the number of noncomplying products, and thus the cost to industry, total emission reductions will also be underestimated. Therefore, ARB staff expects no significant impact on the cost effectiveness ratio as a result of any underestimation of noncomplying products that might possibly have occurred.

23. Comment: ARB's calculation of cost effectiveness is even further in error due to the inappropriate use of national emissions reductions instead

of statewide emission reductions, which inflates the cost effectiveness calculation by nearly an order of magnitude. (CSMA)

Agency Response: It is appropriate to use projected national emission reductions to determine the cost effectiveness of the regulation since the majority of manufacturers market their products nationwide and the emission reductions will be realized not only in California but the rest of the United States as well. A full discussion of the assumptions made by ARB staff can be found on pages VI.3 through VI.4 of the Technical Support Document.

24. Comment: We believe that a more accurate estimate of the economic analysis of the proposed regulation, based on a reasonable estimate of average (instead of a range of) reformulation costs, a more accurate estimate of the number of noncomplying products, amortization of five years, and crediting only a range of emissions reductions that are likely to be attained in California by the regulation, would result in a cost effectiveness ranging from \$16.49/pound to \$82.43/pound. (CSMA)

Agency Response: We do not agree with the commenter's estimate of the cost-effectiveness ratio. A full discussion of economic impacts can be found on pages VI.1 to VI.6 in the Technical Support Document. To summarize, ARB staff provided a range of reformulation costs to reflect the fact that certain products will be much more expensive to reformulate than others. ARB staff expects that the vast majority of the reformulation costs will fall within this range. If the estimate of the number of noncomplying products is underestimated, total emission reductions will also be underestimated as explained in the response to Comment 22. Secondly, the costs of reformulation were amortized over 5 years and 10 years. Thirdly, emission reductions achieved throughout the country were counted for the reasons identified in the response to the previous comment.

25. Comment: ARB's underestimation of the costs of this regulation have lead to proportionate underestimations of the cost increases to consumers that are likely to result. (CSMA)

Agency Response: As discussed in the response to Comments 20 through 24, ARB staff does not believe that the costs of the regulation have been underestimated. Consequently, ARB staff does not believe that the costs to consumers have been underestimated. Further information on the assumptions made on the costs to the consumer can be found on pages VI.4 and VI.5 of the Technical Support Document.

26. Comment: By eliminating certain products forms, the ARB would be forcing consumers to use a form which may not be as safe or effective. A reduction in effectiveness would result in a reduction in demand for the product category, thus reducing company profits and potentially eliminating jobs or driving companies out of business. Such a result would be contrary to the Legislature's desire for cost-effective regulations. (TAG)

Agency Response: We disagree with the commenter that the ARB is forcing consumers to use forms which may not be as safe or effective. Form-specific standards have been included in the regulation where necessary. Analysis of the survey data also shows that there are products available in a wide variety of forms which meet the standards. Therefore, we do not believe that the adverse impacts suggested by the commenter will occur.

27. Comment: We urge the ARB to consider the significant size and importance of the consumer products industry in California, and the economic impact that the amendments may have on California's workers and businesses. The formulation and manufacture of consumer products generates estimated annual sales in California of 1.4 billion dollars. The amendments may potentially drive certain consumer products out of the market, resulting in the closing of businesses, the elimination of jobs, and a decline in payroll and corporate tax revenues. (TAG)

Agency Response: The economic impact of the regulation has been carefully considered, and the Board does not agree that the amendments may potentially drive consumer products out of the market or result in the closing of businesses. Throughout the development of the regulation, ARB staff made every effort to ensure that requirements of the regulation are commercially and technologically feasible. There are products which already meet the standards for all categories currently on the market. ARB staff expects that those products which do not meet the standards will be reformulated to comply with the regulation. As explained in the TSD on pages VI.4 and VI.5, ARB staff also believes that the majority of reformulation costs incurred by manufacturers will be passed on to the consumer. The estimated cost increase ranges from less than one cent to 60 cents.

28. Comment: Simply expecting a positive impact on air quality and public health without further analysis seems an insufficient basis for a regulation that could cost the chemical specialties industry and the American public more than a billion dollars. (CSMA)

Agency Response: The commenter has inaccurately implied that the regulations are based on mere speculation about air quality impacts. As explained at length throughout the record in this rulemaking action, it is well recognized that the use of consumer products results in volatile organic compound emissions, which in the aggregate, contribute significantly to California's air quality problems. The ARB strongly believes that the emissions reductions resulting from the amendments will help improve air quality in California by reducing ozone and PM10 formation. The amendments are a necessary step in the efforts to control emissions from consumer products and implement the mandate of Health and Safety Code section 41712.

29. Comment: The Aerosol Group is concerned that at a time when California is confronting a very severe economic recession, and the scientific community itself is questioning the efficacy of reducing ozone in the atmosphere by limiting certain marginal non-mobile VOC emissions, that

the ARB is engaging in what might seem like an ozone experiment with a number of consumer products that involve our members, and that may eliminate jobs and tax revenue at a time when we can least afford these effects and yet have very debatable environmental impacts. At a minimum, we feel the ARB should not rush ahead with these unnecessary and job-threatening regulations literally weeks after the release of this massive, nearly 500 page report by the National Academy of Science without first carefully considering the input from this leading scientific governmental advisor group. (TAG)

Agency Response: As explained in the responses to Comments 27 and 28, ARB staff believes that the regulation is necessary and will not result in the dire economic results predicted by the commenter. In addition, the findings of the National Academy of Science Report support the strategies which the ARB has been implementing for the last decade. Further discussion of the National Academy of Science Report is contained in the response to Comments 38-40.

D. Emissions and Air Quality Impacts

30. Comment: It remains our position that the regulation of non-photochemically reactive compounds in section 94509(e) and (f) of this regulation is inappropriate, counter-productive, and beyond ARB's statutory authority for the regulation of consumer products under the California Clean Air Act. (CSMA)

Agency Response: It has long been the ARB's position that the regulation of ozone-depleting compounds in consumer products is within the ARB's authority, and is necessary to mitigate the enormous potential for environmental destruction which is posed by these chemicals. The rationale for the ARB's view has been discussed at length in the Final Statement of Reasons in the two prior ARB rulemaking actions on consumer products (the "Phase I" consumer products rulemaking; and the "antiperspirant and deodorant" rulemaking). Both of these Final Statements are attached to this

phase II Final Statement as Appendices A and B (see pages 34 to 36 of Appendix A and pages 29 to 30 of Appendix B).

It should be noted that as part of the Board's current Phase II rulemaking action, only nonsubstantial and clarifying amendments have been made to sections 94509(e) and (f).

31. Comment: The Bay Area Air Quality Management District supports adoption of the proposed Phase II amendments to the consumer products regulation. When fully implemented, the proposed Phase II amendments would yield a 2.7 percent decrease in VOCs within the Bay Area district. (BAAQMD)

32. Comment: The South Coast Air Quality Management District supports adoption of the proposed Phase II amendments to the consumer products regulation. Combined with the previous consumer product regulations, the total statewide proposal could achieve 27 tons per day emission reduction in the region, which is about a 50 percent emission reduction target established for this source category in the District's 1991 air quality management plan Tier 1 controls. (SCAQMD)

33. Comment: The Office of Environmental Health Hazard Assessment (Cal/EPA) supports ARB staff's recommendations to reduce emissions of VOCs from a variety of consumer products. Aggregate VOC emissions from household products contribute significantly to ambient concentrations of both ozone and PM₁₀ in California. Exceedences of the state air quality standards for these substances are likely to be associated with respiratory morbidity, especially in urban areas. (OEHHA)

Agency Response: We agree with the views expressed in Comments 31-33.

34. Comment: It is implied in the Summary of the Staff Report that VOC emissions from consumer products are a significant contributor to particulate matter less than 10 microns equivalent aerodynamic diameter

(PM10), yet no evidence is provided that would support this assumption.
(CSMA)

Agency Response: It is widely recognized in the scientific community that VOCs which reach the atmosphere can become involved in either condensation mechanisms or reactions with other species present in the atmosphere to form particulate matter. The rulemaking record contains several references to existing scientific literature which discuss the causes and formation of particulate matter.

35. Comment: There is insufficient discussion to support the assumption that lowering the VOC emissions from consumer products will have a significant effect to ozone levels in noncompliance areas of the state.
(CSMA)

Agency Response: We disagree. It has been well recognized in the scientific community for several decades that volatile organic compounds (VOCs) contribute to the formation of ozone through photochemical reactions with oxides of nitrogen (NOx). Several references to existing scientific literature are included in the rulemaking record which discuss the relationship of VOCs to ozone formation. In recognition of the relationship between ozone formation and VOC/NOx emissions, the general regulatory strategy for many years in California has been to achieve the maximum feasible reductions in the mass emissions of both VOCs and NOx from all feasible sources to reduce photochemical ozone. The consumer products VOC regulation is part of this general strategy, and will result in a significant reduction in ozone levels in combination with other control measures adopted by the Board and the air pollution control districts.

36. Comment: The Staff Report does not adequately support the statement that "The VOCs used in consumer products are photochemically reactive and contribute to the state ozone and PM-10 problem". Therefore, the statutory requirement that regulations are shown to be "necessary" has not been met.
(CSMA)

Agency Response: As discussed in the response to the previous comment, it is well recognized that VOCs contribute to the formation of photochemical ozone. Since the general regulatory strategy in California is to achieve the maximum feasible reductions of VOCs and NOx from all feasible sources, the regulation of VOCs in consumer products to reduce tropospheric ozone is necessary and consistent with this strategy. The relationship of VOCs to particulate matter formation was previously discussed in the response to Comment 34.

37. Comment: No reference is made in the "Ambient Air Quality and the Need for Emissions Reductions" section in the Technical Support Document to any of the extensive research on the relative photochemical reactivity of various VOC species, or to any air quality modeling studies that might be used to evaluate the relative effectiveness of controlling consumer product emissions versus other emission sources. Among the relevant studies in such an evaluation are numerous studies on relative reactivity by Dr. William Carter and the modeling study performed by Dr. Gary Whitten of Systems Applications. This latter study demonstrated that the control of the VOC emissions from the use of underarm products would be far less effective in terms of lowering ozone formation than the control of most other emission sources. The failure to address photochemical reactivity is particularly perplexing in light of the the ARB and South Coast Air Quality Management District (SCAQMD) sponsored conference on reactivity last year and the recognition of relative reactivity considerations in the ARB's recent regulations for alternative fuels for motor vehicles in the state. (CSMA)

Agency Response: Health and Safety Code section 41712 requires the Board to achieve the maximum feasible reduction in reactive organic compounds from consumer products. This action is necessary since the "easy" reductions have already been achieved from stationary and mobile sources in California. The ARB consumer product regulation meets this statutory requirement because VOCs, as defined in section 94508(88), are reactive organic compounds. The reactivity of these compounds in forming ozone has been demonstrated in many studies by the EPA, the ARB, and a number of

private researchers. Compounds that have been found to be non-photochemically reactive are specifically exempted from the definition of VOC.

The ARB consumer product regulation is currently based on the regulatory concept that an organic compound is either photochemically reactive or it is not (i.e., it is either a VOC or a non-VOC). We recognize that, at least theoretically and under laboratory conditions, the different chemical structures of the various VOCs emitted to the atmosphere can influence the rate of photochemical conversion to ozone. Smog chamber data generated over the years have indicated such variations in reactivities. Nevertheless, as the following section will discuss, there are a number of valid reasons why it is inappropriate at this time to establish a consumer product regulation that is based on the relative reactivity of the different VOCs used in consumer products, rather than the determination that an organic compound is either significantly reactive or it is not.

When compared to compounds that are "highly" reactive, compounds which are relatively "low" in reactivity generally take more time to participate in the complex chemical reactions that lead to ozone and PM-10 formation. However, given enough time and the right atmospheric conditions, these so-called "low" reactivity VOCs will eventually react to form ozone. In many of the state's air basins where much of the population lives, inversion layers which frequently occur over several days can provide the proper conditions (time, solar flux, concentration of reactants, etc.) under which even these low-reactive VOCs react to form ground-level ozone.

Even using current technology, it would be inappropriate for the ARB to base the consumer products regulation on estimated relative grades of reactivity since it is extremely difficult at this time to calculate meaningful estimates of the relative reactivity for the thousands of VOCs used in consumer products. Computing reactivity is not an exact science. There are many compounds for which reactivities have not been estimated and many whose estimated reactivities are speculative at best. In addition,

there are many uncertainties that scientists have not resolved in the methodologies for calculating relative reactivities. Furthermore, the reactivity of any single VOC may vary widely from region to region and over time, depending on variables such as the ambient ratio of VOC to NOx concentrations, temperature, solar flux, and length of time for reaction. These factors vary greatly between California's different air basins and over time within each air basin, further complicating the calculational methodology. Thus, these variables and uncertainties make it very difficult to estimate, at this time, a meaningful reactivity value for the thousands of VOCs found in consumer products.

We do agree with the commenter that recent research on VOC reactivities has been extensive. However, such research is by no means complete and undisputed. The research into determining VOC reactivities conducted to date, especially in the case of VOCs found in consumer products, has not yet yielded supportable data upon which to base a consumer products regulation. Much work remains to be accomplished and many issues need to be resolved before the consumer products regulation can be based on estimated VOC reactivities. This was clearly one of the main conclusions reached by nearly all the researchers and regulators who attended the recent conference on reactivities which was cited by the commenter.

To illustrate the disadvantages of basing a VOC regulation on relative reactivities, the staff of the South Coast Air Quality Management District (SCAQMD) presented at the conference results of a photochemical grid modeling study using current reactivity data. This modeling study suggested that the SCAQMD would not be able to attain the federal or state ambient air quality standards even if all VOCs in the Southern California Air Basin (SoCAB) were converted to so-called "low" reactive compounds, such as butane. These types of modeling studies further support the position that it would be premature for the ARB, even using current state-of-the-art reactivity studies, to base the consumer products regulation on calculated reactivities.

Because of the considerations discussed previously, it is the current general policy of the Board to consider the reactivity of VOCs from regulated emission sources only after the maximum feasible reductions in VOC emissions have been achieved and after supportable data has been generated to base applicable regulations on relative reactivity considerations. Since this is clearly not the case with the recently-adopted consumer product regulations, it would be inappropriate at this time to consider reactivity as a basis for the regulation. Once appropriate data is generated and accepted by the scientific and regulatory community, the ARB staff will evaluate the need to incorporate reactivity considerations into the consumer products regulation. In this way, the Board will avoid enacting reactivity-based standards for the consumer products regulation using existing data which may later prove to be based on inaccurate scientific data.

38. Comment: The use of the National Academy of Science's report to justify opposition to VOC regulations is unacceptable. This is because while the report show the possible need for more focus on NO_x control, it does not show a lesser need for continued aggressive VOC control. (SCC)

Agency Response: We agree. As Chairwoman Sharpless stated at the Board hearing, the National Academy of Science (NAS) report's findings generally support the strategy that has been employed in California over the past decades. In fact, California's control strategy has emphasized the simultaneous control of both VOCs and NO_x, unlike the strategy that has been used in many other states of controlling primarily VOCs. Further discussion of the NAS Report is contained in the responses to the comments 39 and 40.

39. Comment: One of the imports of the National Research Council report is that inaccurate estimates of VOC emissions inventories and underestimation of the significance of NO_x have undermined and misguided governmental strategies to reduce ozone in this country. The study estimates that VOC emission inventories have been grossly underestimated mainly because of underestimates of VOC emissions from cars and trucks and

older cars and trucks in particular. Before we engage on extremely expensive, cost-ineffective regulations of marginal VOC sources, we should allow the full implementation of NOx reductions and additional mobile source VOC reductions. (TAG)

Agency Response: The findings of the National Academy of Science report support the strategies which the ARB has been implementing for well over a decade. The ARB has long recognized the significance of NOx in tropospheric ozone pollution and has been a pioneer in implementing NOx control measures. These NOx reduction efforts include the development of control technology standards on stationary sources such as boilers, heaters and gas turbines and the development of control equipment requirements for mobile sources such as the 3-way catalytic converter and on-board diagnostics. ARB has also long recognized the significance of VOC emissions from cars and trucks and has implemented measures such as the Smog-Check program to insure that cars on the road are meeting ARB's stringent tail-pipe emission standards.

The commenter's call for additional controls on NOx emissions and on mobile source VOC emission only echoes what the ARB is already doing. In the past few years, the ARB has added to its ozone reduction strategy additional innovative mobile and stationary source control measures to reduce both NOx and VOC emissions. Control measures on mobile sources will require cars and trucks sold in the state to progressively meet ultra-low and eventually zero-emission standards. In addition, NOx reduction technology standards have been or are being developed for sources such as industrial internal combustion engines, utility engines, and off-road vehicles. Despite these pioneering efforts, however, California is not projected to attain ambient air ozone standards unless the VOC emissions from the myriad of smaller sources can also be reduced. The combined emissions impact from sources such as consumer products and coatings may be pivotal to the attainment of air quality standards. These sources become increasingly important as California's population continues to grow, thereby driving up product usage and emissions.

Given the well documented negative impact of ozone on public health and crops, it is of great economic importance to California for the ARB to implement controls on sources such as consumer products to progress towards the reduction of ambient air ozone.

40. Comment: A study by the National Research Council (NRC) indicates that further reductions of VOC emissions may not be the proper way to reduce ozone levels further. The NRC study, "Rethinking the Ozone Problem in Urban and Regional Air Pollution", shows that underestimates of VOC emissions have resulted in underestimates of VOC to NOx ratios in the atmosphere, which affect ozone reduction strategies. It now appears that control of anthropogenic VOC emissions will not lead toward attainment of ambient ozone standards in most regions even if all man-made sources of VOCs are controlled. The ARB must shift its focus from expensive VOC reductions from non-mobile sources to NOx reductions and VOC reductions from mobile sources. The report also emphasizes the fact that certain VOCs are much less reactive than others. We urge the ARB to include reactivity in its consumer product regulations, just as it is doing in its mobile source regulations. Given this new study, the ARB must determine that the consumer products regulation is necessary as required by the California Clean Air Act. (TAG, CSMA)

Agency Response: We do not agree with the commenter's analysis. The NRC report cited by the commenter indicates that a singular emphasis on VOC reductions, such as the strategy being employed in many states outside of California, may not be the proper way to reduce ozone. We agree with this position and have been employing a different strategy for reducing ozone than what is currently being employed nationwide. For years, the general regulatory strategy for reducing ground-level ozone in California has been to achieve the maximum feasible reductions in both precursors of ozone formation: volatile organic compounds (VOCs) and oxides of nitrogen (NOx). This strategy includes adopting a goal of achieving the maximum feasible VOC and NOx reductions from mobile, stationary, and more recently, area-wide sources (such as consumer products) and indirect sources (such as parking lots and shopping malls). It is therefore unnecessary for ARB to shift its

regulatory focus, since the ARB is already adopting strategies to achieve the maximum feasible VOC and NOx reductions from all feasible sources. Based on the ARB's many years of experience in these areas, we strongly believe that reductions from all of these sources are necessary to adequately address California's serious air quality problems.

Regarding the commenter's suggestion that the ARB account for differing reactivities of the various VOCs in consumer products, this comment has already been addressed at length in the response to Comment 37. Briefly, sufficient data has not been generated and accepted by the scientific/regulatory community to support basing the ARB consumer product regulation on relative reactivity considerations at this time.

E. Exemptions

41. Comment: Information is provided to demonstrate the "safety" of paradichlorobenzene (PDCB). Documents provided include: (a) briefing by the U.S. Consumer Product Safety Commission which determines that PDCB should not be treated as toxic or hazardous substances, (b) World Health Organization draft document that notes the minimal health hazards posed by PDCB, (c) findings by the Illinois Pollution Control Board in determining that PDCB is not a toxic air contaminant. (PHJW)

Agency Response: The regulations already contain an exemption for air fresheners containing at least 98 percent paradichlorobenzene (PDCB). As explained on page II.7 of the Technical Support Document, it was proposed that an exemption be added for flying bug insecticides containing at least 98 percent PDCB; however, this proposal was subsequently modified to include any insecticide containing at least 98 percent PDCB. Although PDCB is listed by the State of California under Proposition 65 as a chemical "known to the State to cause cancer" and is a Group IIB compound (substance nominated for review) on the ARB's toxic air contaminant identification list, the status of PDCB as a carcinogen is primarily due to animal studies where PDCB was administered orally. At this time, we are not aware of any

evidence of carcinogenicity via inhalation. If the ARB determines that any future controls on the use of this compound may be appropriate, such controls would be pursued through the process outlined in state law for the control of toxic air contaminants. (Health and Safety Code sections 39650 et seq.) The information provided by the commenter would be considered as part of this process.

42. Comment: The exemption of PDCB should be changed. This exemption is designed to allow the continual use of mothballs and the originally proposed language exempts PDCB "flying bug insecticides." However, mothballs also protect clothing from non-flying insects such as carpet beetles. The Chlorobenzene Producers Association recommends that the language in the exemption be changed to include all "insecticides", so all existing uses of mothballs can be continued. (CPA)

Agency Response: Section 94510(g) has been modified as suggested by the commenter.

43. Comment: Bait station insecticides should be exempted from the regulation covering insecticides. Bait stations contribute minimal emissions, because they contain mostly foodstuff, such as oatmeal, that are mixed with small amounts of insecticidal active ingredients. The use of volatile materials in bait station formulations is not preferred as studies have shown that pests are less attracted to feeding stimulants containing volatile materials. (CC)

Agency Response: As suggested by the commenter, an exemption has been added for bait station insecticides (section 94510(k)).

44. Comment: The fragrance exemption in section 94510(c) should be returned to 2 percent for the following reasons:

- (a) a 1 percent limitation would adversely affect those products requiring higher fragrance contents, as well as those fragrances

which require a higher percentage to be effective. Some of those standards which industry has previously believed to be technologically and commercially feasible may no longer be feasible if this provision is altered;

- (b) according to our information, approximately 90 percent of household cleaning products contain fragrance at levels up to 2 percent by weight. The remaining 10 percent of these products contain fragrance at levels between 2-10 percent. Among other regulated product categories, air fresheners and personal fragrance products also typically contain fragrance at levels greater than 1 percent; in fact, many contain fragrance at levels above 2 percent;
- (c) a reduction in the exemption to 1 percent may be counterproductive since product reformulations may increase the content of ingredients that need to be masked by a fragrance. The ARB should encourage the use of ingredients exempt under sections 94510 (c) and (d)(1) and (2);
- (d) the proposed change in the fragrance exemption will do irreparable harm to the fragrance industry without yielding comparable air quality benefits. The paper submitted by FMA demonstrates that the fragrance exemption acts like a limit on fragrance in consumer products, and will lead to a reduction in domestic fragrance business of between 25 and 50 million annually. The paper points out that the ARB did not assess whether or not any significant air quality benefits result from the change in the exemption level. Finally, the paper points out that the amount of fragrance that would likely be taken out of consumer products as a result of the change would be 0.2 to 0.4 tons per day. This is an inconsequential amount of VOC emissions to justify the economic impact on the fragrance industry; and

(e) in explaining the modification to the fragrance exemption in the Technical Support Document (TSD), the ARB cites (on page II.6) the report prepared for the New York Dept. of Environmental Conservation by Pacific Environmental Services. CSMA has reviewed that report and determined it to have very significant flaws as described in our Addendum 1 that invalidate its use as a basis for the regulation of consumer products. (PG, CSMA, FMA, NOW, JBA)

Agency Response: To allow further study of the issues raised by the commenters, section 94510(c) was modified to return the exemption for fragrances to the 2 percent level.

F. FIFRA Issues

45. Comment: We remain concerned that an additional year for FIFRA-registered products will be inadequate in many cases to conduct the testing required by federal and state regulations and to achieve all of the required regulatory approvals from the U.S Environmental Protection Agency and the California Department of Pesticide Registration of the California Environmental Protection Agency (Cal/EPA). In many cases there will be unusual problems caused by events beyond the control of the product manufacturer and registrant that could lead to significant additional delays in achieving the regulatory approvals necessary to market a product in compliance with the Table of Standards. We propose that the following additional provision for FIFRA-registered products be added to section 94509(d):

"Where events beyond the control of the manufacturer preclude the reformulation of pesticide products listed in the Table of Standards by the dates specified, the listed effective date shall be extended until such times as the registration for the complying product is issued by the United States Environmental Protection Agency (EPA) and the California Department of Pesticide Registration (CDPR) of the

California Environmental Protection Agency (Cal/EPA). Events considered to be beyond the control of the manufacturer shall include, but not be limited to: (a) failure of either EPA or CDPR to take sufficiently timely action on the registration application; (b) failure of either EPA or CDPR to register or reregister the formulated product or an active or inert ingredient that is an integral component of the formulated product; or, (c) requirement by EPA or CDPR for additional and unforeseen data above and beyond normal circumstances before registering a finished pesticide product." (CSMA)

Agency Response: To accommodate the time necessary to complete the registration of FIFRA products with EPA and Cal/EPA, the regulation allows FIFRA products an extra year to comply with the standards (see section 94509(d)). We believe that the effective dates specified for FIFRA products in the Table of Standards, even without the additional one year period, provide sufficient time for manufacturers to register and market complying products. The one additional year period provides added flexibility in the cases where product registration becomes unusually lengthy. If events beyond the manufacturer's control prevent the marketing of reformulated complying products, manufacturers also have the option to apply for a variance under section 94514. Depending on the circumstances, events beyond the manufacturer's control could be the failure of the EPA or CDPR to process or review submitted product registrations in normal timeframes.

In essence, we believe that the current language provides adequate flexibility to address industry concerns. The difficulty with the language suggested by the commenter is that it contains a number of extremely vague terms that make it impossible to determine when, if at all, an applicant would be required to meet an applicable standard. The proposed language also establishes a framework where a manufacturer has little incentive to facilitate quick approval for reformulated products by the EPA or Cal/EPA. (i.e., after an application is submitted, the approval process has opportunities for "give and take" between a product applicant and regulatory agencies, and it is often possible for applicants to take steps to slow down

or speed up this process.) Further discussion of some of the issues raised by manufacturers of FIFRA products can be found on pages V.67-V.71 of the Technical Support Document.

46. Comment: The effective date of the standards for FIFRA products should be linked to the date of registration submission to the EPA and to the date of registration approval by the California Department of Pesticide Regulations (CDPR). The marketing of FIFRA regulated products depends on the approval of registrations by the two agencies. While companies can control the submission date, it cannot affect the time to review the registrations. The ARB staff should therefore establish a two tiered effective dates for these products. The first date is when manufacturers must submit the registration for a compliant product to the EPA. The second date is established, based on a reasonable time to market the product after the CDPR has approved the registration. (PG, SDA)

Agency Response: The regulatory scheme proposed by the commenter is unworkable and inappropriate. An effective date tied to an act such as product registration would provide an incentive for manufacturers to unnecessarily delay the introduction of complying products by registering such products at the last possible moment. In addition, a rush of registrations submitted near the effective date may inundate the EPA and CDPR to create further delays in registration approval and the introduction of complying products. As explained in the response to the previous comment, we believe that the current regulatory approach provides sufficient flexibility and lead time to accommodate manufacturers' concerns.

47. Comment: ARB staff has suggested that the variance procedure is an option for companies to seek relief in the event of delays in product registrations. However, this provision, as existing, is not workable. This is because the FIFRA review process is a confidential one, whereas the variance procedure would require a public hearing. Companies avoid divulging their approach to reformulation by the confidentiality procedures

of the FIFRA review process. A public hearing would provide such valuable information to competitors.

In addition, the variance procedures under section 94514 would be unreasonably burdensome to both the ARB and the industry to be used for this purpose. (PG, CSMA)

Agency Response: In response to industry concerns, the variance procedure was modified to provide that confidential (i.e., trade secret) information may be protected from public disclosure during a variance hearing, and that the Executive Officer may consider such confidential information in reaching a decision on a variance application. The variance procedure in the consumer product regulations is quite similar to the procedure set forth in other ARB regulations. The ARB has had experience with considering a large number of other variance applications and has not found the procedure to be unreasonably burdensome either for industry or ARB staff.

G. Innovative Products

Section 94511, the "Innovative Products" section, was originally adopted by the Board in 1991 as part of the Phase I consumer products rulemaking. The provisions of section 94511 are extensively discussed on pages 42-53 and 97-99 of the Phase I Final Statement of Reasons, which is attached as Appendix A to this Phase II Final Statement.

Many of the comments set forth below are the same comments that have previously been summarized and responded to in the Phase I Final Statement. Most of the Phase II modifications simply clarify the intent of Phase I language and do not make substantive changes. Further discussion of the Phase II modifications can be found on page II.7 and II.8 of the Phase II Technical Support Document.

48. Comment: The reference to product form is an unnecessary restriction on the innovative process and will not reduce VOC emissions. If a representative product is "subject to the same VOC limit" as the innovative product as specified in section 94511(b)(1), then it is because it is already of the same product form (in those categories where product form is specified in the Table of Standards), or it is because the one limit applies to all product forms in that category. In the latter case, there is no reason to burden innovative products with the added restriction of comparison to only products of the same form, when products of any form complying with the limit in the Table of Standards can be sold. (PG, LDA)

Agency Response: It is appropriate to require comparison of an innovative product to a representative product of the same form. The Innovative Product provision allows a product which does not meet the VOC content limits in section 94509(a) to comply with the regulation if it can be demonstrated that it will result in less emissions than a representative complying product. To ensure a fair comparison, the representative product must meet three criteria: (1) it must be subject to the same VOC limit as the innovative product, (2) the representative product must be of the same product form as the innovative product; and (3) the representative product must have similar efficacy as other consumer products in the category. These criteria are all necessary to ensure a fair emissions comparison between the innovative and representative products.

Different forms of a product within the same product category often result in very different emissions levels during use. For most categories of products, aerosol products result in more emissions than other forms such as liquids and solids. Considering this, it is important that the innovative and representative product be of the same form. Otherwise, if a single standard applies to all forms of a product category, such as the 10 percent standard for general purpose cleaners, an innovative product such as a powdered cleaner could inappropriately compare its emissions to an aerosol cleaner with several times the emissions of most powdered cleaners.

In addition, the type of data supplied in an application for an innovative products exemption is more meaningful when the innovative and representative products are of the same form. When a manufacturer submits an application for an innovative products exemption, the application will typically contain product performance evaluations and consumer usage studies. These tests often involve comparing the performance or emissions of the innovative and representative products while performing a given task. It is difficult to perform these types of tests with two different forms of a product with different characteristics and performance attributes.

49. Comment: We question the need for a "representative product" to be of the same product form in all cases except when the innovative product is a new form as defined in section 94511(b)(2). We believe that the language of section 94511(b)(2) should be revised to read as follows:

"(2) the representative product shall be of the same product form as the innovative product, if a form is specified in the Table of Standards ..." (CSMA)

Agency Response: The commenter's proposed language would defeat the purpose of section 94511(b), which is designed to insure a fair selection of a "representative" product. Section 94511(b)(1) specifies that the innovative and representative products must be subject to the same VOC standard. If different forms have different standards set forth in the Table of Standards, then under the provisions of section 94511(b)(1) the representative product is clearly required to be of the same form as the innovative product. Therefore, the language in section 94511(b)(2) requiring that the representative product be of the same form as the innovative product only becomes necessary when a single standard has been set for a product category, without different standards for different forms. The language proposed by the commenter would nullify the requirement of 94511(b)(2) in such cases, and could allow inappropriate comparisons between products of different forms. As explained in the response to the previous

comment, the section 94511(b)(2) requirement is necessary to the effectiveness of the Innovative Products provision.

50. Comment: The criteria that a "representative product" have similar efficacy as other complying products should be deleted. This is unreasonable since no other product regulated under this regulation is required to demonstrate efficacy. The inherent requirement of the innovative product provision should be the comparison of usage rate under the same conditions. Thus, it is not necessary to specifically address efficacy. (SDA)

Agency Response: Efficacy testing is an important component of the Innovative Products provision which allows a determination that the emissions will be reduced to a level at or below that from a representative product meeting the Table of Standards. To determine whether an innovative product will result in "less" emissions, one must compare the emissions of the innovative product to the emissions of some other product selected as a standard of comparison. To insure that the comparison is a fair one, the regulation provides that the comparison must be made to a "representative consumer product". It is absolutely critical that the "comparison" product have at least similar efficacy to other complying products (e.g., the comparison product must be "representative" of the other products in the same category). Without this provision, manufacturers could select as a "comparison" product a poorly performing product which results in greater usage and thus greater emissions than other typical products. Thus, the innovative product would appear to result in less emissions, when, in fact, it would result in more emissions than the majority of similar products being marketed. The efficacy requirement avoids this potential loophole.

Furthermore, we do not believe that "usage rates under the same conditions" is a suitable alternative to efficacy testing. While usage rate can be a major factor useful in determining a product's efficacy, it is not the only factor. We believe that "efficacy" is a broader concept which more

appropriately captures whether a particular comparison will be a fair comparison.

The "efficacy" requirement was originally adopted as part of the 1991 Phase I rulemaking. Further discussion of the rationale for the efficacy requirement is contained in the response to Comment 82 in the Phase I Final Statement.

51. Comment: The reference to product efficacy in section 94511(b)(3) should be deleted. The reference to product efficacy is unfair, unnecessary, ambiguous and may make the entire innovative product concept virtually unusable. "Efficacy" itself, is an unclear term. Consumer products deliver performance which can be measured technically along a number of different vectors. For example, general purpose cleaners can be assessed on performance parameters very differently from those measured for hairsprays. Which performance parameters contribute to "efficacy" and how each should be weighted to create an overall assessment of efficacy is completely unclear in the regulation. (PG)

Agency Response: As explained in the response to the previous comment, the Innovative Products provision requires that the representative product have at least similar efficacy as compared to other products in the same category. This requirement is essential to ensure that the required emission reductions are achieved by the regulation. Because of the enormous variety of consumer products on the market, it is simply not feasible to set forth more specific criteria for evaluating product efficacy. To attempt to do so would simply mean that the criteria would not be meaningful for some types of products, with the result that some manufacturers would be deprived of the flexibility afforded by the Innovative Products provision.

While the criteria for efficacy does vary with the type of product, and there may be more than one efficacy parameter for a given type of product, this does not render the Innovative Products provision unusable. There are many different test methods routinely used by the industry to

determine the efficacy of different products, such as the "curl retention" test to determine the hold of a hairspray and the American Society for Testing and Materials (ASTM) standardized "Peet-Grady" chamber test for flying bug insecticides. In cases where more than one efficacy parameter exists, the manufacturer may have to supply the results of more than one test if the performance characteristics measured have the potential to influence consumer usage and thus emissions. It is up to the manufacturer applying for the innovative product exemption to demonstrate that the product meets the requirements of the Innovative Product provision. There may be some situations where it is burdensome or impossible to utilize the Innovative Products provision. In such situations, manufacturers have the option of complying with the VOC limits specified in the Table of Standards. The Innovative Products provision is not designed to allow applications to be made in every case, but only in those cases in which it can be clearly demonstrated that verifiable emission reductions will be achieved.

52. Comment: We disagree with the requirement under (b)(3) that a representative product "must have at least similar efficacy as other complying consumer products in the same product category based on tests generally accepted for that product category by the consumer products industry." Efficacy is a function of not just one function, but of a number of factors, some but not all of which can be quantitatively and linearly measured and compared. For some products, there are standard quantitative industry methods for evaluating some efficacy factors, but in most cases there are none, or only proprietary methodologies developed and employed by individual manufacturers. If this reference to "at least similar efficacy" is retained in this subsection, companies must be allowed to utilize these in-house proprietary methods in cases where no industry standard test method exists, as well as in cases where the proprietary methodology better suits the specific products being evaluated. (CSMA)

Agency Response: Section 94511(b)(3) requires that "... the representative product shall have at least similar efficacy as other consumer products in the same product category based on tests generally

accepted for that product category by the consumer products industry". As stated in the response to the previous two comments, the definition of efficacy does vary with the type of product, and there may be more than one efficacy parameter for a given type of product. In cases where more than one efficacy parameter exists, the manufacturer may have to supply the results of more than one test if the measured performance characteristics have the potential to influence emissions. It is up to the manufacturer applying for the innovative product exemption to demonstrate that the product meets the requirements of the Innovative Products provision. The regulation specifies that tests must be "generally accepted for that product category" in order to insure that a manufacturer's tests actually measure some valid and replicable product characteristic. In-house proprietary methods are not acceptable because there would be no way for ARB staff to independently verify that the tests actually measured something meaningful. As a consequence, in cases where no such "generally accepted" tests exist, the Innovative Products provision is not an option. The Innovative Products provision is not designed to allow applications to be made in every case, but only in those cases in which it can be clearly demonstrated that verifiable emission reductions will be achieved.

53. Comment: The regulation inappropriately specifies the use of "tests generally accepted for that product category by the consumer products industry" in section 94511(b) because:

- (a) there are no such tests for any given category, much less for all the categories included in the regulation. Each manufacturer formulates and tests certain performance parameters (according to proprietary test protocols) based on its own proprietary knowledge of a product category. It weights each of the outputs of the testing in a manner which it believes will predict consumers' assessment of the efficacy of the product. Consumer assessment of efficacy is the only one that is reliable and measurement of that assessment is not without its own unique problems; and

- (b) each manufacturer could conceivably apply to ARB for an innovative product exemption based on testing of different performance parameters, measured in different ways and combined, using different weighting schemes, to demonstrate "at least similar efficacy" as a representative product. Certainly, the ARB could conclude that unless standardized tests were developed, then no products could qualify as innovative products. However, such a conclusion would be a disavowal of the spirit with which the ARB staff has worked with industry to incorporate the innovative product concept into the regulation. (PG)

Agency Response: Industry-accepted test methods which measure the efficacy of various consumer products are available for many product categories. Examples include the curl retention test for measuring the hold of a hairspray, and several standard test methods for measuring the effectiveness of disinfectants against certain viruses and bacteria, the cleaning performance of various household cleaners, and the effectiveness of insecticides against various types of insects. It is true that in cases where there is more than one efficacy parameter, there may be different weighting schemes for measuring "total" efficacy. In such cases, it is up to the manufacturer applying for the innovative product exemption to demonstrate by clear and convincing evidence that the product meets the requirements of the Innovative Products provision. It would not be appropriate to rely solely on "consumer assessment" of a product's efficacy, as suggested by the commenter. While consumer acceptance may be one indication that a product is efficacious, consumers may nevertheless accept a less efficacious product due to such factors as price, product marketing, ease of use, etc. As stated in the response to the previous comment, there may be some situations where it is burdensome or impossible to utilize the Innovative Products provision. The Innovative Products provision is not designed to allow applications to be made in every case, but only in those cases in which it can be clearly demonstrated that verifiable emission reductions will be achieved.

54. Comment: We disagree with the ARB's suggestion that if there is a product on the market which meets the proposed VOC limit in the Table of Standards, then the limit is technologically and commercially feasible. If this were so then that same product should also be a fair standard of comparison for VOC emissions from innovative products. It is simply unfair to use a product as an acceptable standard in one way, but not the other.
(PG)

Agency Response: The comment incorrectly confuses two separate issues: (1) the commercial and technological feasibility of a VOC standard; and (2) the criteria used in choosing a "representative product" as defined in section 94511(b).

The representative product functions as a standard of comparison when the emissions from the innovative product are compared to the emissions from the representative product. It is common knowledge that some products on the market work better than others. Therefore, it is important that the emissions from the representative product be typical of other products in the category that comply with the applicable VOC standard, so that the Innovative Products provision cannot be used as a loophole to sell high-VOC products that will result in more emissions than a "typical" or "representative" product that is presently being sold.

The commenter has correctly pointed out that the Table of Standards sets forth VOC limits which do not contain efficacy criteria. While it might result in greater emission reductions if efficacy criteria could be specified in the Table of Standards, such a regulatory undertaking is not practical considering the wide variety of consumer products that are currently being sold. However, marketplace dynamics can be relied on to eventually result in reduced sales of poorly performing products. As discussed in the following comment, these dynamics would be circumvented if the ARB were to allow an "innovative product" to be approved simply because it emits less than some poorly performing product that a manufacturer has decided to select as a standard of comparison.

55. Comment: The ARB is concerned that relatively poor performing, although low-VOC emitting, innovative products could be created which would be overused to make up for their poor performance, increasing their VOC emissions. This concern is unfounded because:

- (a) major manufacturers are not going to intentionally formulate poor performing products unless forced to by regulations. A manufacturer must provide good performing products at a fair price if it expects to capture and maintain a meaningful share of the market. It may be possible to fool some people some of the time with a poor product, and thus capture a minor niche in the market. However, to maintain respectable market shares over the long haul, performance is essential.
- (b) to qualify an innovative product, a manufacturer must "demonstrate by clear and convincing evidence...the use of the product will result in less VOC emissions..." It is clear that the Executive Officer has complete authority and must be absolutely convinced of the emissions profile of the innovative product. If the Executive officer believes the innovative product may be overused for whatever reason, increasing its emissions, then he can either refuse to grant the exemption or demand data substantiating the actual consumer use level of the product. (PG)

Agency Response: The commenter states that the ARB is inappropriately concerned with the introduction of relatively poor performing innovative products. This does not accurately state the ARB's main concern, however, which is that a manufacturer should not be allowed to select a poorly performing representative product as a standard of comparison. This is why the regulations specify that the representative product must have "at least similar efficacy as other consumer products in the same product category". This requirement was added as part of the Phase I consumer products rulemaking, and was designed to prevent manufacturers from choosing a

representative product that performed uncharacteristically poorly for the category as a whole. As the commenter correctly points out, poorly performing products sometimes capture a minor niche in the market. If this requirement were not included, manufacturers could compare the emissions of an innovative product to the emissions from a product (which may have been on the market for a short period of time or may have only a small share of the market) that performs so poorly that consumers use more of the product, resulting in more emissions.

With regard to the commenter's concern about poorly performing innovative products, the ARB cannot make the assumption that all innovative products will perform well since it is common knowledge that some currently marketed products are more efficacious than others. The Innovative Products provision is available to all manufacturers, not just "major" manufacturers intent on capturing a significant share of the market for the long term. In addition, it is simply not realistic to assume that all products marketed by "major" manufacturers will perform well. Market share is a function of other factors besides product performance, including price, advertising, packaging and even scent.

The commenter also notes that the ARB can refuse to grant an innovative products exemption if it believes that an innovative product will be overused for any reason, thereby increasing its emissions. The comment accurately states the concern that poorly performing products may be overused. To document how much of a product is used to accomplish a given task, data may be developed to substantiate the actual consumer use level of the product. Such data is part of the information commonly submitted by manufacturers to demonstrate, as specified in section 94511(a), that the use of the innovative product will result in less VOC emissions as compared to a representative product.

56. Comment: A minor clarifying phrase should be added to section 94511(f), as follows:

"(f) In granting an exemption...These conditions shall include the VOC content of the innovative product, dispensing rates (if applicable), application rates, and any other parameters...

In granting an innovative product exemption, the Executive Officer is obligated to establish each condition specified in this paragraph. He may add others, but cannot omit those listed. Since dispensing rate is a parameter which is not applicable to all forms for all product categories, the clarification noted above is recommended to allow the Executive Officer discretion in whether or not to establish a dispensing rate for an innovative product. (PG)

Agency Response: This modification is inappropriate. As explained in the response to the same comment (Comment 229) in the Phase I Final Statement of Reasons, the ARB can conceive of no realistic scenario in which all of the listed criteria, including dispensing rate, would not be necessary components of an innovative products exemption.

H. LVP Policy

57. Comment: The exemption of low vapor pressure compounds should refer to the same "LVP" definition that is used in the registration section, since data collected pursuant to this regulation are the data which the VOC standards are based upon. We recommend section 94510(d) to be revised to simply state:

"(d) The requirements of section 94509(a) shall not apply to any "LVP Compound" as defined in section 94508. (CSMA, PG, SDA)

Agency Response: It is not necessary to modify the exemption for low vapor pressure compounds (section 94510(d)). The term "LVP" was created as a convenient "label" for use in registrations and surveys to report compounds that may be exempted under section 94510(d). While it would be possible to reference the LVP definition in section 94510(d), as suggested

by the commenter, the current regulatory language is clearer because it explicitly refers to VOCs, and the definition of VOC explicitly excludes a list of non-photochemically reactive compounds. If the LVP definition were used instead of the current language, this list of non-photochemically reactive compounds would not be as explicitly and clearly excluded.

58. Comment: The definition of "LVP (low vapor pressure) compound", should be expanded to include "(a) compounds with a melting point higher than 20 degrees Centigrade and does not sublime, if the vapor pressure is unknown, and (b) salts of organic acids, if the organic acid is an LVP compound." Vapor pressure data for low-carbon-number solids or organic acids and their salts is often unavailable or extremely difficult to find because these materials are so obviously nonvolatile. Other readily determined materials properties, such as the melting point of non-subliming solids, should be included as criteria for determining the relative emission potential of compounds. In addition, if a organic acid compound is determined to be a LVP compound, then the salts of such acid should also be classified as a LVP without further requirements of vapor pressure data. Expanding the definition as recommended would provide the guidance needed by industry and make the definition consistent with what EPA is using in their consumer products survey.

If this change in the definition cannot be accomplished, we urge the ARB to issue, simultaneously with the regulation, a technical advisory notice that serves to clarify this issue. Failure to address this problem would result in needless, avoidable confusion among companies seeking to develop and market products in compliance with this regulation. (CSMA)

Agency Response: We do not agree with the commenter that items (a) and (b) should be included in the definition of "LVP." This is because the proposed modifications might cause adverse impacts on the emission reductions that can be achieved by the regulation.

While the commenter has suggested that low carbon number solids and organic acids themselves are "obviously non-volatile", data has not been submitted to demonstrate that such compounds would not be emitted into the atmosphere as a result of a product's formulation characteristics. For example, it is possible that a low carbon number solid, if dissolved in a highly volatile solvent, would be "carried" into the atmosphere by the volatilizing solvent in certain types of products.

By contrast, product formulation characteristics were considered by ARB staff in the establishment of the 0.1 mm Hg vapor pressure cutoff as a criterion for the section 94510(d) exemption (the minimum 12 carbon requirement is set forth as an alternative criterion because results from studies have shown that compounds with such carbon chainlength have vapor pressures below 0.1 mm Hg). As stated in the "Staff Report for the 1991 Phase I Consumer Product Regulation" (page 31) the 0.1 mm Hg vapor pressure limit was established because VOCs in consumer products below such vapor pressure "...have very low volatility and due to the product formulation characteristics are less emissive...." This consideration for both a compound's volatility and its behavior in actual formulations is also clearly reflected in the examples, given in the "Staff Report", of compounds that would be exempted by the low vapor pressure exemption. One example given is "high molecular weight resins used in hair sprays." These resins are low vapor pressure compounds dissolved in highly volatile solvents such as ethanol. However, when sprayed on hair, almost all of the resins stay on hair to provide hold and do not volatilize with ethanol. Similarly, other compounds given as examples in the "Staff Report", such as "resins in floor polishes, surfactants used in cleaners, and the heavy oil used in furniture polishes", all represent low vapor pressure active ingredient compounds that, even in product formulations, would not be emitted into the air in any significant amount.

The above examples show that, unlike the vapor pressure limit of 0.1 mm Hg, the conditions suggested by the commenter have not been demonstrated to represent the low "emissiveness" of a compound after it has been

incorporated in a product formulation. Therefore, it is possible that such a modification to the definition of "LVP", or to the conditions of section 94510(d), would result in adverse emissions impacts. With such uncertainty, it would not be appropriate to modify the regulation as suggested by the commenter, even if such modification might conform the definition in this regulation with that in the pending EPA survey.

Contrary to what the commenter suggests, we also do not believe that the specification of vapor pressure and carbon number as exemption conditions will cause unnecessary confusion. This is because vapor pressure and carbon number are clear and specific parameters that can be determined for all compounds. Vapor pressure values for a myriad of compounds have already been compiled in handbooks or chemical abstracts. If it has not been previously determined, vapor pressure can be determined from physical test methods such as those available in the ASTM Standards. Carbon number, on the other hand, are an elemental data for all organic compounds that can be determined simply by looking at the chemical structure of the compound.

However, the ARB recognizes that some manufacturers (perhaps small manufacturers who lack the technical expertise) may need guidance on how they should carry out the steps to determine the vapor pressure of compounds. The ARB staff therefore will be developing a guidance advisory document to help manufacturers determine vapor pressure through appropriate literature searches, chemical and physical test methods, and other available techniques.

59. Comment: The development of an ARB guidance document on LVP determination is insufficient. The regulation should identify the materials subject to the standards or the definition of LVP should be changed as recommended in the above comment (Comment 58). If such expansion of the definition allows for volatile materials to go unregulated, ARB staff can amend the definition later. (PG, SDA)

Agency Response: We do not agree that the regulation should specifically list the materials subject to the standards. There are thousands of volatile organic compounds (VOCs) that could be subject to the standards of the regulation, with more added as formulators develop new products. Similarly there are thousands of compounds that could meet the conditions of the low vapor pressure exemption in section 94510(d). Identifying and updating all these compounds would be an unreasonable task which is clearly beyond the ARB's resources, and which is also unnecessary. The regulation already clearly defines those VOCs which are subject to the standards, and also clearly defines which VOCs are exempted by the low vapor pressure exemption in 94510(d). As discussed in the response to the previous comment, pressure and carbon number can be determined for all compounds by a host of methods. In addition, the ARB plans to provide assistance, through a guidance document, to any manufacturer who may need help in carrying out the steps to determine the vapor pressure of a compound. Regarding the commenter's suggestion that the definition of LVP should be modified, the response to the previous comment discusses at length why it would not be appropriate to make this change.

I. Miscellaneous Issues

60. Comment: The Technical Support Document (TSD) erroneously cites irrelevant data from a study by American Research and Testing to state that, "the transfer efficiencies of pumps and liquids are inherently better than aerosols." There is no reason to believe that the use of a non-VOC propellant to deliver a liquid spray to a surface, in an even and controlled manner, and with no unintentional evaporation during storage or opening of the container is anything but more efficient. (CSMA)

Agency Response: We disagree. The data cited by the commenter is relevant within the context of its use in the TSD. Contrary to the commenter's statement, the language cited by the commenter had nothing to do with an overall comparison of one product form versus another (i.e., pumps vs. aerosols). Instead, the quoted language merely reiterates the study's

finding that, in general, pumps and liquids enjoy an advantage over aerosols in terms of their transfer efficiency or ability to deliver product to the intended surface.

61. Comment: The ARB appears to be establishing an unreasonably high burden of proof regarding whether and how much of the VOC content of products that are disposed in wastewater are ever emitted as VOCs into the ambient air. There is no reason to believe, for instance, that other water-soluble compounds will differ significantly from ethanol, 1,2-propanediol, and 2-aminoethanol. (CSMA)

Agency Response: It is appropriate to question the environmental fate of VOCs released to wastewater systems. Recent studies by experts in the area of wastewater collection and treatment show that significant emissions of "down the drain" VOCs can occur. Results from experimental and modeling studies by Dr. D.P.Y. Chang of the University of California at Davis show that over 20 percent of the trichloromethane dissolved in residential drinking water can be emitted from the wastewater collection systems alone, and further emissions can be possible at wastewater treatment systems. This demonstrates that some chemical species can indeed have very significant emissions after they have been flushed "down the drain".

62. Comment: The focus of regulations on consumer products should be expanded to benefit all environmental aspects and to address the toxic chemicals problem. The Sierra Club recommends that cancer causing chemicals be banned from consumer products. (SCC)

Agency Response: Throughout the development of the consumer products regulations, staff took appropriate steps to minimize any environmental impacts. For example, the regulations prohibit any new uses of ozone-depleting compounds. The regulation of toxic air contaminants, however, is beyond the scope of this rulemaking action. It would be a nearly impossible task to burden this already complex rulemaking with the additional analysis that would be with necessary to adequately evaluate the thousands of

chemicals used in consumer products. The identification and control of toxic air contaminants is more appropriately addressed through the legal process set forth in Health and Safety Code section 39650 et seq.

63. Comment: An effective date of 1/1/94 for the VOC limits in Phase II categories would leave too little time for manufacturers to react to new limits. Contrary to limits for Phase I categories, which are given three years between the date of adoption to the date of effectiveness, Phase II categories would only be given two years if a 1/1/94 date were specified. (SDA)

Agency Response: In the text of the regulation made available for the 45-day comment period, the effective date for the Phase II VOC limits is January 1, 1995. This date will give manufacturers the same lead time as was provided for the Phase I standards.

64. Comment: The statement (on page V.13 of the Technical Support Document (TSD) that HFC-152a is "commercially available" is misleading. It is not commercially available at this time in the quantities needed for its use in consumer products, nor is sufficient plant capacity planned for any time within the period covered by this regulation. (CSMA)

Agency Response: The statement on page V.13 of the Technical Support Document (TSD) refers to the reformulation options described for aerosol cooking sprays. The statement that HFC-152a is commercially available refers to the fact that HFC-152a is currently being used in some consumer products (such as hair mousses). While the quantities available at this time may not provide sufficient amounts for a large segment of the consumer products industry, quantities are nevertheless available for individual products. In addition, increased production is possible if consumer product manufacturers make a commitment to purchase the product in sufficient quantities to make increased plant capacity profitable for HFC-152a producers. As stated in the TSD, the use of HFC-152a to comply with the VOC

standard for aerosol cooking sprays is not necessary. It is simply another option that is available to manufacturers.

65. Comment: In regard to the product efficacy discussion in the TSD, the ARB may be confusing two uses of the term "efficacy"; one is how well the product accomplishes the task (e.g. how clean did the use of the product get the surface), and how efficiently the product does the task (e.g. how much cleaner was needed to attain a certain level of cleanliness). The former is more important component of consumer preference, the latter the critical component in determining what the emissions are per use. (CSMA)

Agency Response: The discussion of product efficacy in the TSD, pages VII.35 to VII.38, does not confuse different uses of the term "efficacy". The ARB staff acknowledges that the term "efficacy" can be defined in different ways such as: (1) how well the product accomplishes the task; and (2) how much is needed to accomplish a given task. Both concepts were considered in the TSD discussion.

66. Comment: The EPA has identified categories of consumer products that are sources of indoor air pollution. I think it would be wise of you to work with the California Energy Commission, which has done a fair amount of investigation on indoor air pollutants. (EHN)

Agency Response: The consumer products regulation was developed to address ambient (i.e., outdoor) air quality standards for ozone and PM-10 (particulate matter less than 10 microns equivalent aerodynamic diameter). Although a reduction in VOC emissions may also result in indoor air quality benefits, the regulation was not intended to address this problem. However, the ARB's Research Division has been investigating indoor air quality issues for some time in cooperation with other government agencies including the EPA and the Energy Commission. Issues associated with indoor air pollution are complex and can be better addressed in a separate rulemaking action.

67. Comment: A separate set of standards should be included in the regulation for metered air product systems, including air fresheners and insecticides, which automatically dispense product ingredients. The standards for these products should be 70 percent on January 1, 1994, and 30 percent on January 1, 1998. (TCLP)

Agency Response: We do not agree that a separate set of standards for metered air product systems is appropriate or necessary. Metered air product systems can be designed to dispense active ingredients for liquids, aerosols or solid matrixes. Data collected from the 1991 Consumer Products Survey shows that there are products currently available in a wide variety of product forms which can comply with the adopted standards for each subcategory of regulated products. Therefore, it is not necessary to establish separate standards for this type of dispensing device.

68. Comment: California Health and Safety Code section 41712 provides a broad mandate to regulate consumer products. This is not a mandate to simply regulate all consumer products to the maximum extent possible, but it is instead a mandate to maximize emission reductions. I believe the indiscriminate regulation of all consumer products makes no effort to maximize emission reductions. I am prepared to offer legislation to clarify the ARB's authority to seek maximum overall reduction in reactive organic compounds if you believe clarification is necessary. I would suggest that the Board seek a more efficient regulatory strategy to meet our shared objectives of clean air in California. (AT)

Agency Response: We do not believe clarification of the ARB's authority to regulate consumer products is necessary. The ARB has not attempted to indiscriminately regulate all product categories, but has instead pursued a rational strategy to maximize emission reductions. In deciding which consumer product categories to regulate, the ARB endeavored to choose those categories with the maximum potential for emissions reductions, taking into account the available data, and the technological and commercial feasibility of reformulation options. While this has not

been an easy process, we believe that the resulting regulatory standards constitute an efficient and cost-effective strategy to implement the legislative mandate of Health and Safety Code section 41712.

69. Comment: The ARB should supply data summaries from the ARB's 1991 consumer products survey on Phase I products as was done for Phase II products. We believe that some of the Phase I standards should be revisited, and this cannot be accomplished effectively until this data is made available. (CSMA)

Agency Response: As staff resources permit, the ARB intends to prepare summaries for the Phase I product categories. We hope to release much of this information in late 1992 or early 1993. If this or other information indicates that some of the Phase I regulatory standards should be revisited, appropriate action will be taken to modify the Phase I standards.

70. Comment: The reactivity of different VOC species was not considered as it has been in the ARB's regulations affecting alternative motor vehicle fuels. (CSMA)

Agency Response: This comment is addressed in the responses to Comments 36 and 37.

71. Comment: The lists of complying products in Table 4A of the Staff Report provide a misleading picture regarding the ability of all products in the category to comply with the standards. Some products such as brake cleaners, carburetor-choke cleaners, fabric protectants, household adhesives, and insecticides comply due to the use of 1,1,1-trichloroethane (and in some cases methylene chloride) and therefore will no longer be able to comply with the regulation when these compounds are phased out and replaced with VOCs. In some other cases, such as disinfectants, the category represents a broad range of products, and most of the complying

products serve different functions than most of those that do not comply.
(CSMA)

Agency Response: We do not agree that the list of complying products in Table 4A of the Staff Report is misleading. The discussion in the Staff Report clearly indicates that Tables 4A and 4B list the number of products that currently comply with the proposed standards. It was not implied that all of these products would be able to retain the same VOC content in the future. Furthermore, the use of 1,1,1-trichloroethane is extensively discussed in chapter VII of the TSD, and the discussions pertaining to each relevant product category also address the ability of products to comply. We believe that it is feasible to meet each proposed standard without using exempt compounds such as 1,1,1-trichloroethane or methylene chloride. Regarding disinfectants, staff does not agree that most of the complying products serve different functions than most of those products that do not comply. In proposing standards for each product category, the staff was careful to ensure that complying products meet the functional requirements of the product category, and serve the same function as those identified as "noncomplying products".

72. Comment: In pages 49-53 of the Staff Report, we believe that cases where "chemical reactions transform VOCs" may be more abundant than has been thus far considered. In addition to the polymerization and wastewater-biodegradation examples cited, there may be significant amounts of VOCs that are combusted into non-VOC species before they reach ambient air. (CSMA)

Agency Response: In considering this issue, staff reviewed the best and most current research regarding the environmental path of VOC emissions to the atmosphere. The ARB staff is not aware of any independent studies or additional information (other than those cited in the TSD and Staff Report) suggesting that chemical reactions that transform VOC's may be more prevalent than shown by current research. With regard to the polymerization and wastewater-biodegradation examples cited in the TSD, staff would like to emphasize that it is inappropriate to assume that the behavior of

cianoacrylate adhesives or the "down the drain" studies (laundry detergents and hand dishwashing soaps) are applicable to other products. Also, staff is not aware of any evidence to date that would support the commenter's speculation that there may be significant amounts of VOC's that are combusted into non-VOC species before they reach the ambient air.

73. Comment: The ARB's discussion on product efficacy in the section of the Staff Report titled "General Issues" confuses a number of very different issues and factors. Many tests are available that can provide precise and accurate quantitative measurement of efficacy for a certain, specific product function. This may be the only function of that product, or one of many. If there are other functions, specific protocols can often be developed to measure the efficacy of the products in those functions as well. The usage rate for the product depends on what function it is being used for, as well as the perceived efficacy of the product by the person using it, and because of this human factor is more difficult to determine precisely. But just because it is more difficult to measure precisely does not mean that it will not occur. It is also important to understand that maximization of quantitative efficacy may not always lead to maximum consumer acceptance. In some cases, consumers will be perfectly willing to use more of a "less efficacious" product, as long as their task can be completed and their goal attained. (CSMA)

Agency Response: We believe that the discussion in the Staff Report (pages 51-52) correctly addresses the issue of product efficacy. The discussion presented by staff was intended to reveal that, although each company may have test methodologies which are used to determine specific performance characteristics of a product, there often exists no generally accepted standard among members of industry on how a particular product's efficacy will be determined. As indicated in the Staff Report product efficacy is determined by a variety of factors which include: product marketing, advertising, cost, promotions, fragrance, consumer perceptions and product convenience. The availability of test protocols or the willingness to develop them is not the sole determining factor for a

product's success. Whether a product is identified as efficacious or becomes a market success depends on a variety of factors that cannot always be measured or determined with a high degree of accuracy.

74. Comment: Some of the modifications made to the definitions of product categories and other provisions of the regulation between the survey and this final regulation have resulted in products being covered by this regulation that were not required to be reported in the 1991 survey, and will have to be the subject of additional survey submissions. We urge the ARB to reissue corrected data summaries so that a more accurate database is available for further review. (CSMA)

Agency Response: The ARB staff does not feel the release of additional data summaries will be necessary. However, if sufficient information is presented to ARB staff which indicates that it will be necessary to correct and reissue Phase II data summaries, appropriate action will be taken as staff resources permit.

75. Comment: Pages V.1-V.85 of the Technical Support Document described an extensive array of potential mechanisms for lowering the VOC content. However, it is not acknowledged that many of these approaches will fail due to such factors as the time and expense involved, technologies that are not sufficiently developed to be acceptable to consumers, or simple lack of technical feasibility of these solutions for most or even all products. Weighted dip tubes, for instance, are cited as being available in Europe, but they have not yet proven to be commercially feasible for any but low-volume, marginal products, and would present significant technical and commercial risks to high-market-share, high volume products in the time span the ARB is proposing in these regulations. (CSMA)

Agency Response: The discussion provided in the TSD was included to give the reader a general overview of the technologies and approaches that exist that may be used to help reduce the VOC emissions from consumer products. The examples given were based on technologies currently in use

and ones that have been successfully used by some companies. However, staff did not intend to suggest, and did not state, that such technologies are suitable for all products. As for the "Weighted Dip Tube" technology, staff simply identified this as an available alternative that can be explored by manufacturers.

76. Comment: There are hundreds of small brand names, private labels, store brands, mail order products, and non-retail industrial and institutional products, which were not included in the ARB's survey. (CSMA)

Agency Response: Although every effort was made to survey all affected parties, ARB staff acknowledges that the survey did not encompass all possible sources of consumer products. However, among the hundreds of companies surveyed were the "HAPPI Top 50" companies which make household and personnel products and industrial and institutional products. As reported in the July 1990 issue of "HAPPI," an industry trade journal, "The HAPPI Top 50 companies probably account for well over 90 percent of the total sales of products in our field." Since responses to the survey include the HAPPI Top 50 companies, staff is confident that a sufficient number of companies have been surveyed to provide a valid representation of the California market.

J. Ozone-Depleting Compounds

77. Comment: Several small marketers whose products appear in ARB's survey are not opposed to using hazardous chemicals (such as methylene chloride) or ozone-depleting compounds (such as CFCs and 1,1,1-trichloroethane) and may gain an unfair advantage over the conscientious marketer attempting to continue to offer the safest, most effective products. (AP)

Agency Response: Products that use exempt compounds, which may be hazardous chemicals, will not gain an unfair advantage because the use of most such chemicals will be restricted or phased-out in the future, thereby

forcing manufacturers to reformulate their products. With respect to ozone-depleting compounds, it should be noted that section 94509(e), prohibits all new uses of ozone-depleting compounds such as CFCs and 1,1,1-trichloroethane. In addition, the production of ozone-depleting compounds will be completely phased-out by the requirements of the federal Clean Air Act, thereby restricting the supply of these chemicals and causing their use to become prohibitively expensive. Aside from ozone-depleting compounds, regulatory efforts are also underway to restrict the use of other hazardous chemicals. For example, the ARB has identified methylene chloride as a toxic air contaminant and is developing regulatory action aimed at restricting its use and emissions.

78. Comment: Section 94509(g) should be modified to also exempt reporting requirements in section 94513 for products containing only impurities of ozone-depleting compounds. In addition, the word "this" should be deleted since it is an incorrect reference and was apparently carried over from an earlier draft of the regulation. (PG)

Agency Response: The first suggested change is not necessary because, reporting requirements for ozone-depleting compounds in section 94513(b)(1) already exempt the reporting of impurities. Section 94513(b)(1) specifies that only compounds "in any amount greater than 0.1 percent by weight" are to be reported. Regarding the commenter's second point, the inclusion of the word "this" was a typographical error. The word has been deleted as suggested by the commenter.

79. Comment: Several categories of products now listed under Phase II of the Table of Standards include products that currently contain 1,1,1-trichloroethane, a chlorinated solvent that is excluded from the definition of volatile organic compounds, but is included in the list of ozone-depleting compounds. The use of 1,1,1-trichloroethane in these consumer products will have to be phased out and most will have to be reformulated within five years. In virtually every case, this reformulation will require organic solvents, unless something comes forth that we don't know about

today. For several of the VOC content standards being proposed, there have been no technologies demonstrated to allow safe and efficacious products that would meet these VOC content standards without the use of 1,1,1-trichloroethane. These standards may have to be changed. (CSMA)

Agency Response: We believe that the standards for all product categories are achievable even accounting for the phase-out of 1,1,1-trichloroethane (TCA). This issue has been discussed at length in the "Technical Support Document (TSD) (pages VII.1-V.II.6). As stated in the TSD, there are complying products in all product categories (except for "fabric protectants") that do not contain TCA or other exempt compounds. For fabric protectants, the industry leader has stated that non-TCA VOC complying technology will be available by the effective date of the standard.

K. Registration

80. Comment: The definition of "product category" should be modified by deleting the language that limits the applicability of the definition only to the registration section, section 94513. Standards in the ARB regulation are all based on data provided in the VOC survey. This means that the standards are valid only if product categories utilized in the registration are also applicable in the whole regulation. If the definition is not applied universally in the regulation, then the entire regulation is without basis and the standards cannot be shown to be technologically and commercially feasible. (PG, SDA)

Agency Response: The definition for "Product Category" was changed as recommended by the commenter.

81. Comment: Eliminate the overly burdensome and unnecessary requirement to submit product labels as part of the registration process. Revise section 94513(a)(3) as follows:

"(a)(3) the product brand and label for each consumer product subject to registration."

Labels change frequently, but mostly in minor ways. The basic information on the label is consistent, but other information can vary from size to size, or between special promotional packages such as price-off packs. Keeping track of all the labels can be a major effort for manufacturers. Submitting them and expecting the ARB to keep them all straight is an unnecessary burden. If the ARB needs certain information found on the label, such as dilution instructions or product category, then it can be specifically requested on the registration form. Many product labels are printed directly onto the container, which may be small or as large as 55-gallon drums. Obtaining and filing product labels and containers, while attempting to keep up with current product labels, would represent a significant expenditure of ARB resources that would be better spent in other areas. (CSMA, PG, SDA)

Agency Response: Section 94513(a)(3) has been modified to require product labels to be submitted only upon request of the Executive Officer. This modification will avoid the problems identified by the commenter while allowing information to be selectively obtained in cases where it might be useful to the ARB's ongoing research efforts on product usage and emissions.

82. Comment: Delete the requirement to report the level and identity of each ozone-depleting compound and fix a typographical error in section 94513(b)(1). Revise this section as follows:

"(b)(1) In addition to...the following products, the total net percent by weight of each ozone-depleting compounds which is are listed in section 945089(ee) and contained...percent by weight."

As argued for sections 94513(a) and 94513(c), the specific identity and level of non-VOCs should not be required in this registration section.

The phrase "in any amount greater than 0.1 percent by weight" is intended to exempt products containing only impurity levels of ozone-depleting compounds from the requirements of this section. However, the placement of this phrase is awkward and it is unclear what noun the phrase is intended to modify. Thus, it is recommended that 94509(g) be modified, as previously indicated. (PG, SDA, CSMA)

Agency Response: ARB staff does not agree that it is appropriate to delete the requirement to report the weight percent and identity of each ozone-depleting compound. In order to ensure compliance with ARB's policy of "no net increase of ozone-depleting compounds" and to monitor usage trends it is necessary to collect the weight percent of each ozone-depleting compound. Regarding the commenters statement about the grammatical awkwardness of the sentence structure, punctuation was added to section 94513(b)(1) to improve the sentence syntax. The typographical error cited by the commenter (the reference to section 94508(c) instead of 94509(e)) was also corrected.

83. Comment: Delete section 94513(c). Due to the magnitude of the burden associated with registration, adding products to those which must register should not be done without allowing all concerned parties an opportunity to offer their views. A proper rulemaking procedure is the appropriate means to achieve this. This way, all interested parties have the opportunity to comment on the appropriateness of that particular registration request. Also, the regulation should explicitly state how deletions from the list of categories to be registered are to be formalized and announced. (SDA, PG, CSMA)

Agency Response: The language of section 94513(c) was adopted by the Board as part of the 1991 Phase I rulemaking, and only minor clarifying modifications have been proposed as part of this Phase II rulemaking. As explained in the Phase I rulemaking, the legislature has directed the ARB to gather information and conduct research of the sources of air pollution in California (see Health and Safety Code section 39607 and 39701), and has

granted the Board broad powers to fulfill this statutory mandate (see Health and Safety Code section 39600, 39601, and 41511). Health and Safety Code section 41712 also specifically states that the Board is to adopt consumer product regulations only if "adequate data" exists. Section 94513(c) is necessary to give the Board sufficient flexibility to continue its research program, and to rapidly modify this program as increased knowledge reveals consumer product categories that need to be further examined. The Board also believes that the requested registration data is readily available from company records, and that, given this fact, 90 days is a more than adequate time period for companies to compile the information. By including this provision in section 94513(c), the affected public is being placed on notice that such information may be required in the future. In addition, section 94513(c) has become ever more essential to the regulation because section 94513(a) has been substantially modified to reduce the burden on manufacturers. As modified, section 94513(a) requires only a "one time" submission of data. Section 94513(c) allows future data requests to be more limited in scope in order to avoid imposing a broad data requirement on all manufacturers. The commenter's suggestion that a separate rulemaking be performed for each data request is simply not practical (given the long lead time inherent in the rulemaking process) and is not legally required in light of the ARB's broad grant of authority in the Health and Safety Code. It should be noted that a request for data imposes only minimal obligations on manufacturers. If the ARB desires to use collected data in any subsequent rulemaking to impose regulatory standards, an opportunity for additional notice and public comment will be provided as part of that future rulemaking action.

84. Comment: If section 94513(c) is not deleted, at least require that additions to the list of products required to submit registration information be based on entire categories of products, not just individual products, as the current language would permit. If a product category warrants study by the ARB, then all members of that category should be investigated. Revise this section as follows:

"(c) Upon 90 days...may also require a manufacturers to supply...for any consumer product category that the Executive Officer...no longer necessary." (PG)

Agency Response: The suggested modification is not appropriate because there may be times when scientific data is necessary only on a few products, or only on a specialized subcategory of products. In such cases there is no reason to require that all manufacturers in a product category be subjected to unnecessary reporting obligations.

85. Comment: We strongly oppose reporting of specific concentrations and chemical identities of all Table B and LVP compounds in regulated consumer products. As recognized by ARB, these compounds are either negligibly photoreactive or of such low volatility that they do not contribute to the formation of ozone. These compounds and their concentrations are highly confidential and the ARB has inadvertently released confidential VOC data in the past despite published assurances. Failure to maintain the confidentiality of the more detailed information now being requested by the ARB could lead to disastrous business results for a manufacturer. Collection of such data is not necessary for the ARB to implement its statutory mandate. The requirement to register the specific chemical name, associated CAS number, and the concentration of each Table B and LVP should be deleted from the regulation. In addition, the information is so sensitive that it should be considered for collection only if there is no other way for the ARB to implement its statutory mandate, which in this case, clearly does not meet this test. (PG, SDA, CSMA)

Agency Response: In response to the concerns expressed by the commenter, sections 94513(a)(9) and 94513(a)(10) were modified for Table B and LVP compounds. The modified language requires only the reporting of the specific chemical name and associated CAS number for these compounds. The requirement to also specify the concentration of each Table B and LVP has been deleted. This modification will protect the most sensitive information (concentration), while allowing the ARB to obtain sufficient information to

fulfill its responsibilities. The remaining information will allow ARB staff to establish a "baseline" to track rule effectiveness, the use of exemptions by manufacturers, and the potential impact on air quality. Furthermore, it is necessary to have this information to facilitate ARB product testing and enforcement of the regulation. We would also note that although the commenters apparently do not trust the ARB's procedural safeguards, sections 94513(d) and 91000-91022, Title 17, CCR, contain substantial protections for confidential data submitted by manufacturers. The ARB is committed to following these procedures for all confidential data submissions.

L. "Sell-Through" Period

86. Comment: CSMA and CTFA sponsored a study which measured the age (from date of manufacture) of a number of consumer products found in several types of retail stores in the Los Angeles/San Diego areas. The data indicated that in every product category that was surveyed, 20 percent or more of the products were still on the retail shelf 1 to 2 years after the date of manufacture in at least one type of retail outlet. The study also indicated that as much as 10 percent of the consumer products remain unsold after 2 years. This study shows the need for a greater than 18-month sell-through period for existing consumer products in order to avoid costly product recalls. (CSMA, CTFA)

Agency Response: We do not believe that the CSMA/CTFA data shows a need for a greater than 18-month sell-through period. The presented data showed only the location where products were purchased, and the date these products were manufactured. The data did not account for the length of time the products remained in the manufacturer's inventory, distributor's inventory, or retailer's inventory before actually being placed on the shelves for direct sale to consumers. In some instances, due to the periodic shifting of inventory between and within distribution or sales centers, some products may remain in storage much longer than other products resulting in their being sold later. The results of the CSMA/CTFA study are

therefore inconclusive, and do not contradict the ARB staff conclusions set forth in the Technical Support Document (TSD).

As described on pages VII.26 through VII.35 of the TSD, ARB staff re-evaluated the information gathered during the development of the Phase I and II regulation and conducted its own survey of retail businesses to determine the typical sell-through period. Based on the information obtained and the analysis set forth in the TSD, staff determined that a one-year sell-through period is sufficient and that, in general, product recalls will not occur. However, after taking the staff recommendation and industry testimony into consideration at the hearing, the Board decided to modify the regulation to provide an 18-month sell-through period for both the initial effective date and any future effective dates specified for the product category. The additional six months provided by the modified regulations will allow even more assurance that sufficient time will be available for "older" products to clear the retail shelves. Furthermore, the regulations also provide that adequate time will be available for the sell-through of products subject to future-effective standards.

To further reduce any potential for product recalls from wholesale distributors and retailers, ARB staff has also undertaken an extensive effort to inform businesses of the consumer products regulation and the sell-through provisions. This effort has thus far resulted in notices and announcements being sent to both members and non-members of various distributor and retailer associations and the development of a consumer products information packet containing the regulation and other pertinent information.

87. Comment: Many retail channels of distribution take two years or more from the manufacture date to clear that product through the distributor and retailer to the consumer. If the sell-through period is required within one year of the effective date of the standard, significant quantities of the old product will be left in many retail establishments, especially for smaller retail establishments. This will create an unjustifiable burden on

the entire national distribution systems that will already be strained with the need to supply reformulated products for one state. (CTFA)

Agency Response: At the January 9, 1992 board hearing, the one-year sell-through period was amended to 18 months. This extension allows an additional amount of time for retail businesses, especially small businesses, to rid their shelves of "old" products and minimize any recall or burden on the distribution system. As discussed in the response to the previous comment and on pages VII.26 through VII.35 of the TSD, ARB staff has extensively investigated these and other issues and concluded that businesses will not suffer significant adverse impacts due to the length of the sell-through provision. We also disagree with the commenter's statement that it takes two years or more from the date of manufacture to clear a product through the distributor and retailer to the consumer. This issue is also thoroughly discussed in the response to the previous comment and in the TSD.

88. Comment: From their own survey described on pages VII.26 through VII.35 of the TSD, ARB staff concludes that a one-year sell-through period is adequate for most of the consumer products surveyed. We disagree that these conclusions are valid for the following reasons:

- (a) the survey fails to take into account the time a product is in the distribution pipeline prior to reaching the retailer or the amount of time the product is in a warehouse or other storage prior to being placed on the retail shelf,
- (b) although flawed, the survey still demonstrates that 11 percent and 13 percent of stores having annual sales of less than \$3,500,000 and \$500,000 respectively, have typical sell-through periods of more than one year, and 2 percent have sell-through times over three years at both income levels. When combined with the Audits & Surveys study which measures the time from the date

of manufacture to the date of retail sale, it strongly supports a minimum of a two-year sell-through period,

- (c) voluntary opinion-based response surveys are subject to high risks of bias and high levels of error, and tend to be unreliable mechanisms to obtain complex technical data such as shelf-residence times for various products,
- (d) the questions were phrased in a manner that elicited from the respondents an opinion about the average time taken to sell consumer products. The residence time of individual products should be best represented by a frequency distribution function rather than an average because the proposed sell-through provision would only reflect the shortest shelf life extreme of that frequency distribution. (CSMA, CTFA)

Agency Response: (a) In determining the appropriate length of the sell-through period, the relevant question is the length of time it takes a product to be sold to the consumer after being placed on the retail store shelf, not the time a product remains in the distribution pipeline or in storage warehouses. It is easier to manage unopened boxes of "older" products in a distributor's warehouse than it is to remove such products after they have already been dispersed to retail shelves. Since the protection of retailers (especially small retailers) is the primary purpose of the sell-through provision, the ARB survey was designed to determine the relevant length of retail store shelf time.

(b) As discussed previously, the regulations have been modified to provide for an 18-month sell-through period. We believe that the 18-month period will provide ample time for retailers to clear their shelves of noncomplying products, and we do not agree that a minimum two-year sell-through period is needed. As shown on page VII.32 of the TSD, the survey indicated that for stores having annual sales of less than \$500,000, 87 percent of all products were sold within one year and 97 percent of all products had a sell-through

period of less than 2 years. This survey shows what is occurring at this time, without any incentive to meet a compliance date by clearing the shelves of older products. We believe that once the regulations become effective retailers will have both ample time and sufficient incentive to ensure that noncomplying products are sold. This will further reduce the already small number of products which do not sell in 18 months. Furthermore, as explained in the response to Comment 86, ARB staff is also working with distributor and retail associations to inform members as well as non-members of the regulation and sell-through provisions so that adequate time will be provided for everyone involved.

(c) We believe the survey provides a valid representation of the sell-through period for products sold from retail stores. The survey questions were constructed to simply ask the respondent to indicate approximately how long, in years, the products in each category stayed on the shelves before being sold. The questions are direct and contain simple language to avoid any confusion or misinterpretations on the part of the respondent. For small retail businesses, the respondent is usually the owner because he or she cannot afford hired help. Since the small business owner is usually in the best position to know how quickly products are sold off the shelves, the survey may actually reflect a higher degree of accuracy for small businesses.

(d) We disagree that the residence time of individual products should best be represented by the most extreme portion of a frequency distribution. The survey was not intended to discover the longest time it would take for every single product in a category to be sold off the shelves. This would bias the response to favor only those products which took the longest to sell and neglect the effect of those products that sell in a short time. The survey was intended to obtain a general picture of the typical time it takes for the categories being surveyed to be sold off the shelves. Therefore, we believe a response representing the average time it takes for the products to be sold is appropriate for the survey, and can serve as a valid reference

point for determining the length of the sell-through period in the regulations.

89. Comment: Under the California Clean Air Act, the South Coast Air Quality Management District is required to achieve expeditious progress toward clean air. Therefore, the shortest feasible sell-through period is recommended to allow orderly transition to lower VOC emitting products. The 18-month period appears to be reasonable for this application. (SCAQMD)

Agency Response: We agree with the comment and have increased the sell-through period in the regulations from one year to 18 months.

90. Comment: The time limitation on the sell-through period should be eliminated because the average time from manufacture to final sale varies greatly according to company, product, and distribution system. The limitation would require an unnecessary recall of products because wholesale distributors and retailers would not be able to sell all of the existing inventory produced prior to the compliance date. The standards should be applicable based on a product's date of manufacture because it provides a clear cutoff point for which manufacturers must take action. ARB staff's fear that this might result in stockpiling is unfounded because this practice is against the practice of modern manufacturing and distribution. The consumer products market emphasizes the minimization of inventory for just-in-time delivery to reduce warehousing cost. If ARB staff continues to have concern about stockpiling, specific language that addresses this practice should be proposed. (CSMA, PG)

Agency Response: We do not agree with the comment that the sell-through period should be eliminated or that unnecessary recalls would occur. These issues have been thoroughly discussed in the response to Comment 86 and pages VII.26 through VII.35 of the TSD. Regarding the commenter's suggestion that the standards should be based on a product's date of manufacture, the Board determined that this was not appropriate. A regulation that is based on the date of manufacture would not achieve

emission reductions as quickly as the sell-through period because manufacturers would be encouraged to maximize production of noncomplying products until the last possible day. Such products could then be stockpiled and sold in California for many years. Such a regulation would also have serious enforcement problems because fraudulent manufacturing dates could be placed on products, and it would be very difficult to verify that a particular date was inaccurate. An 18-month sell-through period will minimize these potential problems.

Contrary to the commenter's feelings, the ARB believes that the potential for stockpiling is a serious one. In some cases reformulated "new" products may cost more than "old" products, thereby providing an economic incentive for stockpiling that does not now exist. Furthermore, stockpiling has occurred in the past for other environmental regulations that have used sell-through periods (i.e., local district architectural coatings regulations). The approach taken by the ARB is clear and straightforward, and will avoid the potential problems much better than trying to draft vague and probably unenforceable language that would somehow address "stockpiling practices", as the commenter suggests.

91. Comment: The extension of the sell-through provision or any other delay in the implementation of the standards is unacceptable because the public expects results from the regulation soon. The Sierra Club points out that industry invariably develops new technology through research to meet the regulatory standards which they have protested. (SCC)

Agency Response: While we are sympathetic to the concerns expressed by the commenter, the ARB recognizes that all companies cannot simply change their technology "overnight". The regulations have been carefully developed to allow adequate time for companies to develop and market complying products. We believe this is a fair and practical approach which will not impose undue hardship on consumer product manufacturers. Regarding the extension of the sell-through period by six months, the Board believes that

providing this additional time is appropriate to address the concerns raised by industry (see response to Comment 86).

92. Comment: The small percentages of product that remain in the distribution chain after one, two, or three years would not represent a significant amount of increased VOC content, while the costs associated with searching out, withdrawing, and redistributing outside the State those few older products would be extremely high, and unnecessary for the purposes of this regulation. (CSMA)

Agency Response: To ensure that noncomplying products will be phased-out from distributors' and retailers' inventory in a timely manner, the sell-through period has been extended to 18 months and ARB staff has undertaken an effort to notify distributors and retailers of the regulations and sell-through provisions. We believe that these actions will minimize or eliminate the necessity for product recalls, and will minimize significant expense for distributors and retailers. Further discussion of these issues is contained in the response to Comments 86, 87 and pages VII.26 through VII.35 of the TSD.

93. Comment: The current one-year sell-through proposed by the staff would cause significant problems in the marketplace and non-compliance on the part of the vast majority of retailers and distributors. Thousands of California wholesalers, distributors and retailers would have to develop a new inspection and monitoring system for all consumer products to determine the following:

- (a) whether the consumer product is subject to regulation;
- (b) the date of manufacture of that consumer product;
- (c) the compliance date for consumer product;
- (d) the cease sale date for that consumer product. (CSMA)

Agency Response: We believe that the sell-through period is both fair and workable. As previously discussed, the one-year sell-through period has

been changed to 18 months to allow additional time to sell noncomplying products. Also, ARB staff expects that manufacturers will assist distributors and retailers in identifying which products do not comply with the specific VOC standards in the regulations. After all, manufacturers have a strong incentive to both maintain good relationships with their customers and to avoid legal liability for sales of noncomplying products to distributors and retailers. This type of cooperation will help to prevent products from remaining on the shelf longer than 18 months. Finally, sellers of consumer products have a great deal of experience with inventory control of their products and any changes that need to be made would be temporary (until older noncomplying products have all been sold) and would not require the creation of an entirely new inspection and monitoring system.

94. Comment: We urge ARB to establish no sell-through limitation that provides less than three years for legally-manufactured products to be cleared through the channels of trade in California. (CSMA)

Agency Response: While it is not necessary to provide a 3-year sell-through period, the regulation has been modified to provide an 18-month sell-through period. The Board concluded that an 18-month sell-through period will provide an adequate margin of safety to insure that extensive product recalls will not result. The full rationale for the sell-through period is provided in response to Comments 86, 87 and on pages VII.26 through VII.35 of the TSD.

95. Comment: The one-year sell-through period in section 94509(c) is not adequate. We understand the Board's concern that "stockpiling" of noncompliant products will occur. However, we do not believe that it will occur because of the finite amount of space that meets National Fire Protection Association (NFPA) standards for aerosols designated "Level 3" by NFPA Code 30B. In addition, economics and prudent business practice preclude carrying excessive inventory. The stock turnover rate will remain constant, while at the same time, the products that can be offered for sale

will be limited to the complying products. Finally, a sell-through period that is too short will result in product inventories that will have to be handled as hazardous waste. Smaller stores might not realize that these are hazardous wastes and dispose of them in landfills. (HC)

Agency Response: ARB staff has determined that an 18-month sell-through period is appropriate for the consumer product categories being considered, and that extensive product recalls would not result. The full rationale for staff's decision is provided in response to Comments 86, 87 and on pages VII.26 through VII.35 of the TSD. In addition, ARB staff has already notified distributors and retailers and their associations about the upcoming requirements in order to give them ample lead time. ARB staff will also work with additional distributors, retailers and associations in the future to ensure that they are aware of the requirements of the regulations and have time to plan accordingly. Given the long notice and lead time, it is not credible to believe that significant numbers of products will be disposed of as hazardous waste. Furthermore, it is not economically prudent for small stores to dispose of noncomplying products when many of them have agreements with distributors to "sell back" or get credit for unsold products. With respect to the commenter's belief that stockpiling will not occur, staff believes that while the majority of industry may not stockpile, there is a very real possibility that some stockpiling will occur. Experiences in other areas such as architectural coatings has shown this to be the case (see response to Comment 90 for further discussion of stockpiling).

96. Comment: If the Board will not support the concept of allowing the products to enjoy their natural shelf life, we would support a 3-year sell-through period, with a cutoff manufacture date consistent with the Table of Standards. Data will be submitted by CSMA and CTFA showing the minimal effect of extending the sell-through period to three years. (HC)

Agency Response: At the Board hearing, the ARB decided to extend the one year sell-through period to 18-months. The Board based its decision in

part upon information from ARB staff's retail store shelf survey. The results of the survey show that the vast majority of the products clear the shelves within one year. An additional six months has been provided to allow slower moving products extra time to clear the shelves. With respect to the data submitted to the ARB staff regarding the sell-through period based on the date of manufacture, we believe the results of the study are inconclusive. Our explanation for this conclusion is given in the response to Comment 86.

97. Comment: We are concerned by the limited, now 18 months, sell-through provisions provided for consumer products. The average time from manufacture to final sale varies greatly according to the company, product, and distribution system. Many smaller companies and retailers and less well-known specialty products have much longer sell-through requirements than the 18-month sell-through period currently proposed. (CSMA)

Agency Response: We do not agree with the comment that many smaller companies and retailers have much longer sell-through requirements than 18 months. As shown in the TSD on page VII.32, 87 percent of all products were sold within one year and 97 percent of all products had a sell-through period of less than 2 years. This survey shows what is happening right now, when there is no incentive to meet a compliance date by clearing the shelves of older products. ARB staff believes that, given the 18-month sell-through period, small retailers will have ample time to ensure that noncomplying products are sold. Many small retailers also have "buy back" agreements from their distributors if certain products are not sold within a given period. This would further reduce the already small number of products which do not sell in 18 months. For these reasons, ARB staff believes that small businesses will easily be able to sell the vast majority of their products within the 18-month period.

98. Comment: The 18-month sell-through period may require an unnecessary return of products, because retailers would not be able to sell all of their existing inventory produced prior to the compliance date. Since the intent

of the regulation is to phase-out noncomplying products, industry really should be allowed to do so in an orderly manner, and retailers should not be subjected to unnecessary enforcement actions. A reasonable and practical alternative to the now 18-month sell-through limitation would be to simply move the sell-through date to two to three years. (CSMA)

Agency Response: Extending the sell-through period to greater than 18 months is not necessary. We have explained the rationale for this position in the responses to the previous comments and on pages VII.26 through VII.35 of the TSD.

99. Comment: The sell-through period should apply to the future-effective standards as well as the initial VOC standards. It's inconsistent to have a sell-through period for one set of standards and not for another. It's going to take every bit of that period to develop new product formulations. (CSMA)

Agency Response: As suggested by the commenter, section 94509(c) was modified to grant a sell-through period of 18 months to both the initial standards and the future-effective standards.

100. Comment: We disagree with implications inherent in the statement in the TSD that, "manufacturers will have a minimum lead time of 4 years to phase-out existing inventories, prepare formulated complying products, and prepare for the recall of noncomplying products, if necessary." Manufacturers will find it difficult to complete all of the product research, development, testing, and in many cases regulatory approvals, required to develop complying products by the effective date. Product recalls often cost manufacturers many times the value of the product recalled, and are therefore used only where there is a threat to the public health and safety. (CSMA)

Agency Response: The Phase II compliance dates are effective beginning January 1995 (1996 for FIFRA registered products) and the consumer

products industry has been aware of the proposed regulatory developments since 1991. In addition, at the hearing, the Board approved an additional 6 months for the sell-through period to provide further flexibility to distributors and retailers. To comply with the standards, in most cases manufacturers will not need to develop completely new products but will only need to reformulate existing products. Manufacturers have several alternatives to comply with the standards, some of which are described on pages V.1 through V.3 of the TSD. In other cases, manufacturers already have complying products and need not make any changes. Regarding the concern for product recalls, this issue has been thoroughly discussed in the TSD and in the responses to a number of the previous comments.

M. Technological and Commercial Feasibility

This section contains general comments on the technological and commercial feasibility of the regulation. Comments on the feasibility of the standards for specific categories of consumer products are contained in Section P.

101. Comment: Due to the potentially negative economic impact of the proposed amendments to the regulation and the recent publication of a major study by the National Research Council challenging the feasibility of reducing ozone levels by limiting VOC emissions, we believe the proposed amendments may not meet the standards of necessity and technologically and commercially feasible which are set forth in Health and Safety Code section 41712(b). (TAG)

Agency Response: As explained in the responses to Comments 38-40, the conclusions of the National Research Council Study do not support an argument that the proposed regulations are unnecessary or infeasible. The economic impacts of the proposed regulations have also been thoroughly addressed in the responses to Comments 15-29 and on pages VI.1 to VI.7 of the Technical Support Document. Based on the analyses set forth in these

and other responses, we believe the criteria of Health and Safety Code section 41712 have been met.

102. Comment: The proposed amendments to the consumer products regulation fall short of the criteria in the CCAA which the Board must meet in developing regulations for consumer products. We believe that the following represent valid interpretations of some of the key statutory requirements:

- (a) The VOC reductions must be technologically and commercially feasible. If requirements are imposed that no product or company can achieve while maintaining that product's commercial acceptability, then the requirement is not technologically and commercially feasible.
- (b) The ARB may only regulate reactive organic compounds.
- (c) The ARB may only limit emissions of VOCs from consumer products and has no authority to regulate VOCs which are not emitted. The ARB also has no authority to regulate products that are not consumer products.
- (d) Regulations can only be adopted if adequate data exists.
- (e) The regulations must be found to be necessary, including at a minimum, an analysis showing that VOC emissions from consumer products will be reduced. We also believe that demonstrating that a regulation is necessary also requires an analysis showing that the standards proposed would result in a reduction in ozone formation in non-compliance areas of the state. (CSMA)

Agency Response: In this general comment, the commenter (CSMA) asserts that the proposed regulations fail to meet the requirements of Health and Safety Code section 41712. However, CSMA has not identified the specific ways in which these requirements were not met. Other parts of this

Final Statement summarize and respond to CSMA's more specific objections on the proposed regulations.

With regard to the overall interpretation of section 41712 that is set forth in this comment, we believe that this interpretation is essentially correct with the exception that the regulations can be shown to be "necessary" without the kind of complex analysis proposed by the commenter. Pages 9 to 14 of the Staff Report explain why a reduction in VOCs from consumer products is necessary to help solve California's serious air quality problems. In enacting the California Clean Air Act, the Legislature could not have intended that measurable VOC and ozone reductions must be conclusively demonstrated for the proposed standards. Such detailed analysis is beyond the capability of current air quality monitoring and modeling analysis, and requiring such a demonstration would prevent the ARB from fulfilling the Legislative mandate to "...achieve the maximum feasible reduction in reactive organic compounds emitted by consumer products..." (Health and Safety Code section 41712).

103. Comment: We disagree with the ARB's interpretation of "technologically feasible" which consists of a simplistic two part test: "(1) the standard is already being met by at least one product within the same category, or (2) the standard can reasonably be expected to be met in the time frame provided through additional development efforts." The first criterion encourages lowest-quality products. Taken to its logical extreme, water can be bottled and labeled as a cleaner, even if no one would buy it. The second criterion hinges on the phrase, "can reasonably be expected", which should not apply to cases where there is no known technology that allows compliance with the standard. (CSMA)

Agency Response: The ARB's interpretation of the term "technologically feasible" is set forth on page 17 of the Staff Report. The discussion of this term was intended to briefly present the basic concept in a simple, easily understood way, and this brief discussion is consistent with how the term has been interpreted by the courts and the scientific

community. While the commenter has characterized the discussion as "simplistic", in actual practice the determination of "technological feasibility" is a complex process that requires considerable staff resources. The proposed VOC standards for each product category have been arrived at only after careful analysis and extensive consultation with affected industry groups. This process has assured that determinations of technological feasibility for consumer products have not been subject to the potential pitfalls suggested by the commenter.

104. Comment: We believe that the term "commercially and technologically feasible" is a single, interactive criterion. There could be standards that have commercially feasible solutions or technologically feasible solutions, but not both. It should also be noted that commercial feasibility is critical to the effectiveness and achievability of the regulation. (CSMA)

105. Comment: Based upon the plain meaning of the term commercial, a regulation is commercially feasible if it is suitable or adequate for commerce. Therefore, to comply with section 41712(b), the ARB must consider not only the available technology, but the impact of the Amendments on the consumer products industry and consumers. (TAG)

106. Comment: Technological feasibility must take into account the feasibility of producing a product that accomplishes its task while presenting no avoidable adverse effects. (CSMA)

107. Comment: Commercially feasible must take into account whether that product can be marketed in a form and at a price that will attain consumer acceptance. (CSMA)

Agency Response: In the preceding four comments, the commenters make a number of general observations about the meaning of the terms "technologically and commercially feasible". While it is not entirely clear how the commenters intend these general observations to be applied to specific product categories, we nevertheless believe that the commenters

have correctly identified several factors that should generally be taken into account in determining whether a proposed standard is technologically and commercially feasible. The ARB believes that these factors have been adequately considered for each VOC standard set forth in the regulations.

108. Comment: The definition of "commercially feasible" as explained in the Staff Report is legally incorrect. Staff's interpretation of this term erroneously relies on International Harvester as authority. The standard developed under International Harvester is inapplicable to Health and Safety Code section 41712 because the case addresses the meaning of different language under a different law--the federal Clean Air Act. The language of the federal Clean Air Act is not similar to Health and Safety Code section 41712; section 202(b)(5)(D) of the Clean Air Act deals exclusively with determining whether technology is available, whereas section 41712(b) specifies that ARB regulations must be both technologically and commercially feasible. (TAG, CSMA)

Agency Response: The ARB's interpretation of the term "commercially feasible" is set forth at length on pages 15 and 16 of the Staff Report. We believe that this interpretation accurately reflects the intent of the Legislature in adopting Health and Safety Code section 41712. The commenter is correct in pointing out that the court in International Harvester was interpreting language which appears in the federal Clean Air Act, and that the holding of this case does not constitute a binding legal precedent for the interpretation of Health and Safety Code section 41712. However, ARB staff has not relied on this case as "authority" for our interpretation of the term "commercially feasible". Staff has simply utilized the reasoning of the court in carrying out the ARB's responsibility to interpret and implement section 41712. It is appropriate to utilize the reasoning of this case because, based on staff's research of the various court decisions in the area of air pollution law, we believe that the court in International Harvester was considering issues that are quite similar to the ones faced by the ARB in developing the consumer products regulations.

109. Comment: Staff's definition of "commercially feasible" fails to consider the intent of the Legislature in adopting Health and Safety Code section 41712, as evidenced in the legislative history. The legislative history of section 41712 supports the position that the Air Resources Board must take the costs to the consumer products industry and consumers into account when evaluating "commercial feasibility" and regulating VOC emissions. The desire for a cost effective pollution bill explains why section 41712 was amended by the Legislature to include language prohibiting regulations that are not "commercially feasible". By relying on the International Harvester standard, the ARB may in effect ban some product forms on the grounds that consumer demand may be met by other product forms. Such a ban would violate the Legislature's intent by failing to consider the potential costs to industry and consumers. (TAG)

Agency Response: For the reasons identified in the Staff Report (pages 15 and 16) and the response to the previous question, we believe that the ARB has correctly interpreted the meaning of the term "commercially feasible". While the cost to industry and consumers is certainly one of the relevant factors in determining whether the "basic market demand" for a product can be met, we believe that "cost-effectiveness" is not the same concept as "commercially feasible". Section 41712 was adopted as part of the California Clean Air Act, in which the Legislature directed the ARB to adopt regulations to control emissions from a number of different sources. For certain sources it is specifically required that adopted regulations must be "cost-effective" (e.g., Health and Safety Code sections 43013 and 43018). With regard to consumer products, however, the Legislature did not use the term "cost-effective", but instead required that the regulations be "commercially feasible". The use of these two distinct terms indicates that the Legislature did not intend them to have the same meaning, as the commenter seems to be suggesting.

Regardless of how one may view the formal statutory requirements under section 41712, it is nevertheless the policy of the ARB to consider both the overall cost to industry and the cost-effectiveness ratio for each

regulation that is proposed for Board adoption. As explained in the Staff Report (pages 39 to 41) and Technical Support Document (pages VI.1 to VI.6), these costs were estimated by ARB staff and considered by the Board in adopting the consumer products regulations (see also the responses to Comments 15-29).

110. Comment: Even if the ARB were to apply the standard set forth in International Harvester, staff's interpretation of "basic market demand" is too narrow. By focusing only on the broad function served by a product category, this interpretation disregards the narrow functions served by specific forms or formulas of products in submarkets. These separate product forms and formulas satisfy specific consumer needs which must be preserved. For example, under staff's excessively broad interpretation of "basic market demand", the ARB could effectively ban all forms of motor vehicles except passenger cars (or even bicycles or walking) and still meet the basic market demand for "transportation". Such an analysis inappropriately ignores the important functions provided by sub-markets, such as pickup trucks, and illustrates that distinct functions provided by submarkets must be considered to truly meet the "basic market demand".
(TAG, CSMA)

Agency Response: This comment is discussed on page 16 of the Staff Report. To briefly summarize this discussion, meaningful consumer product standards could never be adopted under the interpretation suggested by the commenter, since virtually every individual product form or formula would be viewed as fulfilling the "market demand" of a separate submarket. This narrow interpretation is simply not consistent with the clearly expressed legislative intent that the ARB "... adopt regulations to achieve the maximum feasible reduction in reactive organic compounds emitted by consumer products ...".

Furthermore, the commenter has inaccurately applied the principle of "basic market demand" in suggesting that the demand for "transportation" could be met by banning all vehicles except passenger cars or bicycles. In

the regulation of motor vehicles, the ARB has long recognized that different categories of motor vehicles serve different functions and should be subject to different emission standards. Differing emissions standards have therefore been adopted for light-duty trucks, passenger cars, heavy duty vehicles, etc., just as differing VOC standards have been adopted for different categories of consumer products. The relevant question--for both motor vehicles and consumer products--is what categories are appropriate to include in the regulatory framework. The particular categories and subcategories set forth in the consumer products regulation were developed after extensive consultation with industry, and after a number of modifications were made in response to industry comments about where the boundaries of each category should be drawn. We believe that this long process has resulted in the adoption of product categories that are appropriate reflections of the "basic market demand" for the consumer products covered by the regulation.

111. Comment: Several of the Phase I future effective standards are not commercially or technologically feasible, and should be deleted from the regulation. (CSMA)

Agency Response: The ARB believes that each of the Phase I standards is technologically and commercially feasible. The basis for this conclusion is explained at great length in the Final Statement of Reasons for the Phase I consumer products rulemaking. The Phase I Final Statement is attached as Appendix A to this Phase II Final Statement.

112. Comment: If consumers cannot obtain formulated products capable of performing the tasks they need to perform, those consumers are likely to use other materials to accomplish those tasks, which could result in more VOC emissions than the consumer products they replaced. (CSMA)

Agency Response: As explained at length in the Staff Report and Technical Support Document, each of the proposed VOC standards has been set at a level which is technologically and commercially feasible. This means

that efficacious complying products will continue to be available to California consumers. Therefore, consumers will not need to use alternative materials that might increase VOC emissions.

N. Test Methods

113. Comment: Section 94515(b) should be modified to permit the use of alternative analytical methods which accurately determine the concentration of VOCs in the product or its constituents as follows:

"(b) Testing to determine...in section 94515, the results of the testing may be used to establish a violation of the requirements of this article. the manufacturer may provide additional analytical proof of compliance using alternative methods that accurately determine the concentration of VOCs in the subject product or its constituents."

The methods specified in section 94515(a) will not accurately estimate VOCs for the myriad of products identified for regulation. It will clearly go beyond the ARB's capabilities to consider and approve alternative methods for each manufacturer's product. No validation of the methods for analysis of consumer products has been offered as support for their citation in the regulation. In cases where the manufacturer's records demonstrate compliance, but that demonstration is not supported by the specified test methods, it is most likely that the specified test methods will be found in error. Therefore, it is inappropriate to establish a violation solely on the basis of methods whose accuracy and precision has not been demonstrated for the product in question. In cases where manufacturing records and analytical results do not agree, manufacturers should be able to submit additional data demonstrating compliance of the product in question with the appropriate VOC standard. (PG)

Agency Response: As explained in the response to Comment 115, we believe that the referenced test methods are the best ones available. It is

also common practice for ARB regulations to specify approval of alternative test methods, and from past experience staff believes that this process will not result in a significant administrative burden. To provide additional flexibility for manufacturers, we agree that the use of accurate and verifiable production records may be appropriate in determining compliance in some cases. Section 94515(b) allows a manufacturer to use its production records for calculating VOC content and determining compliance with the standards, provided that the records are accurate in determining the VOC content and are maintained as specified in section 94515(b). In addition, the last sentence of section 94515(b) has been deleted in order to avoid establishing a conclusive presumption that test results are always superior to a manufacturer's production records in determining compliance. Further discussion of some of the issues raised by the commenter is contained in the responses to the following five comments.

114. Comment: Section 94515 should explicitly allow the use of equivalent or more accurate test methods and should provide explicitly for test results to be adjusted to account for the presence of exempt VOCs in the products. Further, the section should be revised to explicitly state that production records described in section 94515(b) take precedence over the analytical tests listed under section 94515(a) in determining compliance with the regulation. SDA is certain that the proposed test methods will not accurately measure VOCs in cleaning product matrices. For example, errors in analysis will occur when the first method listed in this section (Method 24/24A) is used to measure VOCs from products containing hydrated compounds that release their water molecules at temperatures of 120^o centigrade or less. Finally, the ARB should establish a regulatory framework for reconciling differences between the specific VOCs regulated under section 94509 (exclusive of compounds exempted under section 94510) and the measurements made using the test methods listed in section 94516 [sic, should be 94515]. SDA recommends that section 94513 [sic, should be 94515] be revised as follows:

"(a) testing to determine...which are shown to the satisfaction of the Executive Officer to accurately determine the concentration of nonexempt VOCs in a subject product or its emissions may be used upon approval of the Executive Officer to determine compliance.

(b) in determining compliance with this article, the Executive Officer shall adjust test results to exclude exempted VOCs contained in a product or its emissions which are included in the results of analytical test measurements made of product.

(bc) testing to determine...at least three years. In any case, where manufacturer's records appear to demonstrate compliance but compliance is not demonstrated by actual testing conducted pursuant to the test methods specified in section 94515, the results of the testing may be used to establish a violation of the requirement of this article. Testing for compliance through calculations based on the records specified in this subsection takes precedence over analytical results obtained using the methods listed under subsection (a)." (SDA)

Agency Response: The commenter has made several points, each of which will be addressed separately:

- o We agree with the commenter's first suggestion to allow the use of alternative test methods. However, no modifications to the existing language is necessary to implement the suggested change since section 94515(a) already explicitly allows the use of alternative test methods that are approved by the Executive Officer.
- o We do not agree with the commenter's suggestion that language should be added to exclude exempted VOCs. It is not necessary to explicitly require an adjustment in section 94515 to account for