CONSUMER PRODUCTS
CONTROL PLAN

State of California
Air Resources Board

Stationary Source Division

June 16, 1989

CONSUMER PRODUCTS
CONTROL PLAN

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CONSUMER PRODUCTS
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INTRODUCTION

1. What the law requires

The California State Legislature, aware of California's serious air pollution problems and the inability of many air basins to meet the State and Federal ambient air quality standards, enacted the California Clean Air Act of 1988 (CCAA). The CCAA added Section 41712 (Appendix A) to the California Health and Safety Code, which requires the Air Resources Board (ARB) to adopt statewide regulations by January 1, 1992, to achieve the maximum feasible reduction in volatile organic compounds (VOC) emitted by consumer products.

2. What consumer product categories are to be regulated

As defined in Section 41712, "consumer product" means a chemically formulated product used by household and institutional consumers, including, but not limited to, detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; and automotive specialty products. Based on this definition, we estimate that the consumer products subject to regulation under Section 41712 number in the thousands. We have consolidated the consumer products that will be subject to regulation into five categories: personal care; automotive and industrial; household; pesticides; and miscellaneous. Examples of products that are in each of these categories are listed in Table 1.

3. Nature of the regulatory task

Regulating such a widely distributed and diverse group of products will not be a simple task, and we expect a certain degree of departure from traditional regulatory approaches. In addition, any regulations that the Board adopts will have the potential for wide-ranging consequences. We recognize that California will be a leader and the testing ground for the rest of the nation in the adoption of comprehensive consumer product regulations. Since regulations to control consumer products can affect not only industry and the marketplace, but personal lifestyles as well, it is

imperative that the ARB develop a well-organized approach and work closely with industry, local districts, and others to ensure regulations that are effective, fair, and enforceable.

4. About the report

This report presents a brief overview of consumer product solvent emissions in California, current regulatory activities concerning consumer products, a discussion of regulatory strategies to reduce consumer solvent emissions, and an overview of the control plan and schedule designed to implement the mandate under Section 41712. This report does not address control of volatile organic compounds emissions from other solvent use categories such as Architectural Coatings, Industrial Coatings, and Industrial Solvent Use. For these sources, ARB does not have the direct authority to regulate emissions but instead will be working cooperatively with the Air Pollution Control Districts through the Technical Review Group to develop suggested control measures to reduce emissions of volatile organic compounds. The Air Pollution Control Districts will use the suggested control measures to base their development and adoption of regulations.

TABLE 1
Consumer Product Categories*

Personal Care

Shaving Lather
Hair Care Products (hair sprays, mousse, gels, shampoo)
Medicinals and Pharmaceutical (vaporizers, fungicides, burn treatments, antiseptics, contraceptives)
Colognes, Perfumes, and After Shave
Personal Deodorants, Antiperspirants, Powders and Deodorant colognes
Other Personal Products (suntan preparations, lotions, breath fresheners, depilitories)

Automotive and Industrial

Refrigerants
Windshield and Lock Spray De-icer
Cleaners (automobile upholstery, leather, vinyl, dressing, tire cleaners)
Engine Degreasers
Lubricant and Silicones (penetrating oils, demoisturizers, rust proofing, mold releases)
Spray Undercoating
Tire Inflator and Sealant
Carburetor and Choke Cleaner
Brake Cleaner
Engine Starting Fluid
Other Automotive and Industrial Products (e.g. adhesives)

Household

Room Deodorants and Disinfectants
Cleaners (glass, oven, rug, fabric, wall, and tile)
Laundry Products (starch, fabric finish, pre-wash)
Waxes and Polishes
Other Household Products (shoe polishes dyes, leather dressing, fuels, drain openers, anti-stats, caulking and sealing compounds)

Pesticide

Space Insecticides
Residual Insecticides (personal and surface repellants, moth proofers)
Lawn and Garden Pesticides

Miscellaneous

Fire Retardant Sprays
Pan Spray
Aerosol Food Products (whipping cream, cheese)
Veterinarian and Pet Products (shampoos, insecticides, repellants)

* The products listed in each category are examples of the more common products and do not include all products in each category.

I.

CONSUMER PRODUCT EMISSIONS

A. EMISSION ESTIMATES

Organic compound emissions from consumer products contribute to the air pollution problem in California. Volatile organic compounds that are precursors to ozone formation are used as solvents and propellants in consumer products and are emitted during the use of the various consumer products.

Emissions from consumer products result from many small point sources distributed over a large area that collectively function as an area source. Each time a consumer uses hairspray, writes a letter with a felt-tip pen or waxes a car, volatile organic compounds are released to the atmosphere.

While emissions from individual products may seem small, the total emissions quickly become significant when multiplied by the California population using consumer products. This is reflected in the total emissions for the individual product categories. In Table 2, several individual product categories and the associated estimated emissions for 1985 are listed. Aerosol paint usage is the largest, with 29 tons per day of volatile organic compounds being released to the atmosphere from the application of aerosol paints followed by hairsprays at 27 tons per day. Based on the 1985 ARB Emission Inventory, total emissions of volatile organic compounds from consumer products in California was estimated to be 227 tons per day in 1985 accounting for approximately 6 percent of all volatile organic compound emissions in California. The consumer products inventory is broken down into categories of pesticides, personal care, household, automotive and industrial, and miscellaneous (all other products). As shown in Figure 1, these consumer product emissions account for 27 percent of all non-vehicular solvent use emissions in California and is the second largest source of solvent use emissions.

The ARB staff has developed preliminary estimates for 1987 consumer product volatile organic compound emissions by updating from the 1983 inventory values. Total emissions are estimated to be 250 tons/day in

California in 1987, a 10 percent increase from 1985. Assuming per capita usage of consumer products to be the same as in 1983, the emissions from each consumer product category for 1987 were estimated and are shown in Figure 2. There is uncertainty in the emission estimates, primarily due to the lack of readily available data on California consumer product sales, usage, and volatile organic compound content. To improve the accuracy of the emissions estimate surveys of companies marketing consumer products in California are needed to expand and update the inventory.

B. SOLVENTS USED IN CONSUMER PRODUCTS

A variety of solvents are used in consumer products. In a report by Science Applications International Corporation (SAIC,1988), over 60 different volatile organic compounds were identified that are used in consumer products. These solvents represent the major solvent groupings including oxygenated and hydrocarbon solvents. The more common solvents found in consumer products are ethanol, isopropyl alcohol, kerosene, propylene glycol and those hydrocarbon solvents used as propellants--isobutane, butane, and propane.

A common misperception is that chlorofluorocarbons (CFCs) are used in consumer products, particularly as propellants in aerosol containers. Prior to 1978, CFCs were the propellant of choice in most aerosol consumer products, however, in 1978 the EPA responded to increasing evidence that CFC's persisting in the atmosphere were contributing to the destruction of the upper stratospheric ozone layer by banning the use of CFCs in non-essential aerosols. Exemptions from this ban in the consumer product area were allowed only for selected pesticide and pharmaceutical applications (40 CFR Part 762.1). It is estimated that less than 2 percent of the total U.S. production of aerosols are exempt from the federal government ban on CFC use in aerosols (Young).

TABLE 2

1985 Emission Estimates for Selected Individual Consumer Products

Product	Emissions, Tons/Day
Aerosol Paints *	29
Hairspray	27
Windshield Washer Fluid	24
Pesticides	14
Radiator Anti-Freeze	14
Brake Fluid	14
Household Cleaners	10
Household Polishes	10
Body Lotion and Cremes	9
Anti-Perspirants and Deodorants	7
Lubricants and Silicones	6
Laundry Products	6
Automotive Refrigerants	4
After Shave	4
Carburetor and Choke Cleaner	4

Emission Estimates based on 1983 ARB Emission Inventory adjusted for population growth.

* Aerosol paints are specifically excluded from ARB regulatory authority under CRC Section 41712, but may be regulated by local districts.

SOLVENT USE CATEGORIES AND ASSOCIATED EMISSIONS FOR 1985

TONS/DAY

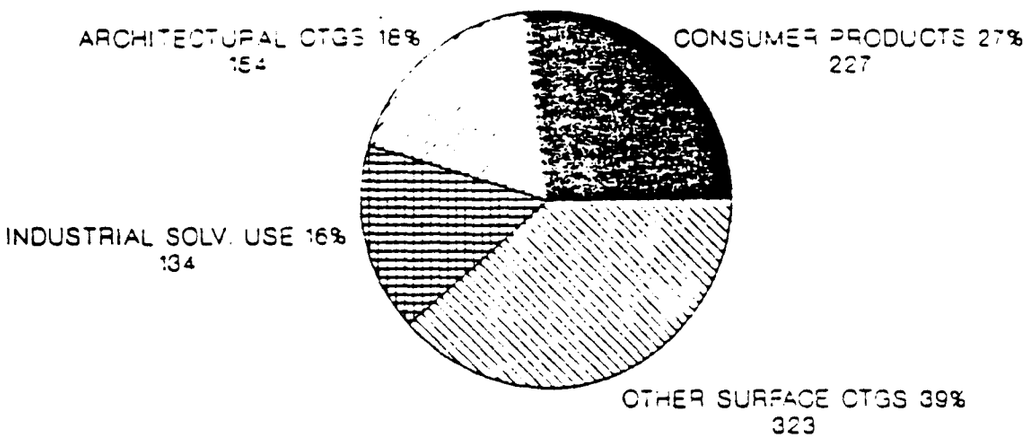

FIGURE 1

Source: 1985 ARB Emission Inventory

1987 FORECASTED CONSUMER PRODUCT EMISSIONS BY CATEGORY

TONS/DAY

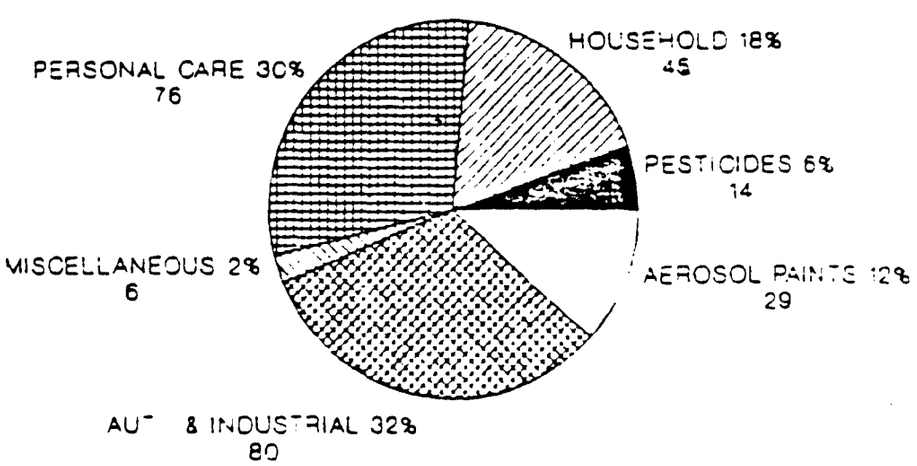

FIGURE 2

Source: 1987 Preliminary ARB Emission Inventory

II.

STATUS OF CURRENT REGULATORY ACTIVITIES

There are several ongoing activities related to control of consumer product solvents currently underway in the United States. A brief synopsis of these activities is presented in this chapter.

A. CALIFORNIA

Consumer products have been recognized as a source of volatile organic compound emissions in California for some time. Several districts made commitments in their 1982 Air Quality Management Plans to develop consumer product regulations for the State Implementation Plan if attainment for ozone was not achieved in those districts. ARB's main activities involved quantifying emissions and identifying candidate product categories for Suggested Control Measure development. Research studies were contracted for the areas of laundry products and hair care products.

ARB staff first selected deodorants and anti-perspirants for development of a suggested control measure. Initial work on a draft suggested control measure began in 1985. Over the next 3 years significant revisions to the suggested control measure were made based on input obtained at public workshops and from meetings with industry. With the passage of the CCAA, the deodorant and anti-perspirant suggested control measure was revised into a draft regulation. This draft regulation was discussed at a workshop in February 1989 and a second workshop is scheduled for July 1989. The deodorant and anti-perspirant regulation is currently scheduled to go before the Board in October 1989.

The South Coast Air Quality Management District (SCAQMD) has included the category of consumer products in their 1988 draft Air Quality Management Plan (AQMP). They break the category out into domestic products (non-underarm), and underarm products. Consumer products comprise one of the largest sources of non-vehicular volatile organic compound emissions in the South Coast Air Basin. Proposed control measures in the AQMP consist of reformulation, alternative application other than aerosol propellant, and banning reactive aerosol propellant formulations. Under the CCAA,

development of these control measures is the primary responsibility of the ARB. The CCAA requires the ARB to establish regulations by 1992 to control emissions from these sources to the maximum extent feasible. The CCAA provides that prior to January 1, 1994, a district shall adopt no consumer solvent regulation which is different from any regulation adopted by the ARB for that purpose.

B. NESCAUM

NESCAUM (Northeast States for Coordinated Air Use Management) is a consortium of 8 states in the northeast region of the nation, consisting of Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. The purpose of the NESCAUM Ozone Committee is to develop regional ozone reduction strategies, specifically for consumer products, architectural coatings, and possibly for several stationary source reasonably available control technology (RACT) categories. These strategies will then be adopted by the individual states. NESCAUM is attempting to assess the regional transport of ozone and its precursors through the use of various models.

In November 1988, the Ozone Committee held a meeting to explore a cooperative approach to the regulation of volatile organic emissions from consumer products. In attendance were representatives from NESCAUM, New York, New Jersey, Vermont, Massachusetts, Texas, California, and the US EPA Regions I and II, and the Office of Air Quality Planning and Standards (OAQPS). Topics discussed included the regulatory development process, the status of various state programs, and the future development of new regulations. The overall agreement was that a coordinated approach to consumer products regulation would work best, with those states that are already working on regulations for specific product categories taking the lead on those categories. Attendees agreed to meet approximately one year later to discuss progress and exchange any reports that may have been written during that time.

C. NEW YORK

Both New York and New Jersey are currently under court directive to fully implement their respective State Implementation Plans, which includes adopting consumer product rules. New York has a research contract with Pacific Environmental Services to do an emissions inventory for the product categories of spray paints, hair sprays, all-purpose cleaners, adhesives, insecticides, and air fresheners/disinfectants. New York's first consumer products rule, 6 NYCCR 235, for consumer insecticides, air fresheners, and disinfectants was adopted in September 1988. The rule applies only to the New York City metropolitan area. Elements of the rule include registering all solvent-containing products with the state by September 1989; requiring an industry-sponsored study to establish a basis for regulations, scheduled to be complete by December 1994; and implementing controls to reduce emissions by at least 25 percent by 1997.

D. NEW JERSEY

New Jersey has reviewed the results of their public hearings on air fresheners and adopted a regulation in February 1989 which limits the solvent content for air fresheners sold in New Jersey to 50% by weight, effective February 28, 1990. For air fresheners, solid forms have a volatile organic compound content of 5-10%, and aerosol forms have 90-99% Since sticks have such a low-VOC content and relatively few emissions relative to aerosols, the inventory is considered to be 100% aerosols. New Jersey is anticipating a reduction of one ton/day from a 1986 emissions inventory amount of approximately 4 tons/day.

Consumer insecticides were initially scheduled for regulation as well, however, industry asserted that the court-ordered time schedule of one year to comply with implementation of the SIP was too short to allow them to reformulate and get EPA approval. They requested a period of 3 to 5 years to reformulate; consequently, this category was temporarily suspended from regulatory action. They are planning to work with economists from Rutgers University on an economic incentives project for consumer products, to be funded by EPA. They are also considering a public education program for consumer products.

E. TEXAS

In 1988, Texas adopted Regulation V (31 TAC Chapter 115) for the Dallas and Tarrant counties prohibiting volatile organic compounds in motor vehicle windshield cleaning fluid. No available substitutes or alternatives other than the ban were found, and the regulation doesn't take into account any potential freezing during winter if only water is used as a cleaning fluid. The Texas Air Control Board expects some people in the regulated area to purchase VOC-containing cleaning fluid from outside the area for use during winter months. They plan to informally track the retail sales outside the Dallas/Tarrant area during that period of time to see if sales do increase. Final compliance of affected parties is required no later than December 31, 1989. Texas has indicated that if there is a large negative public reaction once the regulation goes into effect, they may have to revise it.

F. U.S. EPA

EPA has had studies done by SAIC, a private consulting firm, on the potential speciation of commercial/consumer products volatile organic compound emissions (emphasis on toxic species) and on the use of emission factors at the state/local level. A draft report came out in September 1988 and the final report in March 1989.

A research workshop on volatile organic compound area sources and ozone nonattainment was held at Research Triangle Park in May 1988 by EPA's Air and Energy Engineering Research Laboratory's Air Toxics Research Division. Workshop participants recommended that EPA's Office of Research and Development (ORD) furnish support to individual states and the EPA Regions

for the regulation of consumer products, specifically in the areas of: potential substitute components for products, to reduce reactivity and toxicity; potential substitute products; research on the use of propellant type in aerosol products; establishing a national clearinghouse of information on State regulatory/research efforts for consumer products; increased Federal support for State regulatory efforts (ie--acquiring confidential information); improved emissions inventory techniques; and better test methods for consumer products testing.

III.

APPROACHES TO REDUCING EMISSIONS FROM CONSUMER PRODUCTS

Because consumer products are area sources rather than point sources, add-on control equipment for consumer products is currently not considered to be technically and economically feasible. Thus, the reduction of volatile organic compounds from consumer products will result mainly from two strategies: (1) modifying the chemical composition of the product so that fewer or no volatile organic compounds are emitted, and (2) increasing the amount of product that is delivered to its intended goal, thereby reducing the amount of product wasted and the total amount of product needed. These two strategies can be further broken down into four subcategories as follows:

a. product reformulation
b. product substitution or elimination
c. consumer education
d. alternative application techniques

A. PRODUCT REFORMULATION

For the purposes of this discussion, the reformulation of a product involves the elimination or reduction of the volatile organic compounds present in the product. This can be accomplished in two ways: (1) replacing the volatile organic compounds which are not considered to be key ingredients in the product with water and other environmentally safe solvents, and (2) reducing the amount of volatile organic compounds in a given volume of the product, resulting in a more concentrated product. Because of water's unique properties, its use as the carrier or diluent in a product is favored whenever possible. Concentrating a product will also reduce volatile organic compound emissions because less total product is required, thereby reducing the amount of volatile organic compound emitted for a given application.

B. PRODUCT SUBSTITUTION OR ELIMINATION

Many low- or non-VOC-emitting consumer products currently exist in the market. These products can be effective substitutes for similar products with comparable properties but which emit more volatile organic compounds. Thus, product substitution or elimination would involve the increased production of those products with low-VOC emissions and the phase-out of similar products with higher-VOC emissions.

C. CONSUMER EDUCATION

Because of a lack of awareness and proper instructions, many consumers unnecessarily or excessively use some VOC-containing products. As such, public education will be essential to the success of consumer product regulations. Education will be needed to inform and influence consumers on the proper choice and use of the wide variety of products on the market and to inform them of lower volatile organic compound emitting practices that are available.

D. ALTERNATIVE APPLICATION TECHNIQUES

Alternative application techniques modify the product delivery system. Modifications to the product delivery system include traditional as well as novel techniques that reduce volatile organic compound emissions by either of two ways: (1) eliminating VOC-based propellants, or (2) increasing the ratio of the amount of product delivered to the amount of product expelled from the container (transfer efficiency). The novel delivery systems include non-VOC propellant systems such as the EXXEL, compressed gas, and carbon dioxide (CO_2) -generating spray systems. In addition, some aerosols can be delivered using traditional technologies such as a handpump or can be applied as solids, liquids, or powders.

The EXXEL system is a self-pressurized system that relies on the pressure exerted by a rubber sleeve in a bladder to disperse the product through a valve nozzle. For some products, compressed gas, such as nitrogen (N_2), can be used to as the propellant. For other products, a system that generates CO_2 as the propellant can be used. In addition, some aerosols can be delivered using traditional technologies such as a handpump, which works on the principle of mechanical input forcing the product through a valve nozzle to disperse the product. Other aerosol products can be applied as solids, liquids, or powders.

IV.

REGULATORY STRATEGIES

There are several regulatory approaches to consider when developing regulations to reduce solvent emissions from consumer products including the traditional command and control, bubbles and the use of economic incentives. These three strategies are briefly discussed in this chapter. It is unlikely that one strategy will fulfill all the needs for a consumer product regulation but it is highly probable that aspects of each approach will be used to encourage industry to take advantage of lower volatile organic compound alternative products by using the techniques described in the previous chapter. As is common with the development of air pollution regulations, we expect the regulatory strategy to evolve and be refined based on discussions with industry and others.

A. COMMAND AND CONTROL

"Command and Control" is a term often given to the conventional approach to regulation where specific pollution sources are required to achieve specified emission levels. This type of regulation generally specifies a method that must be used to mitigate the pollutant emissions, such as an add-on control device, or dictates a specific level of pollutant that is allowed in a product (volatile organic compound standard). A command and control regulation for consumer products would, for example, specify specific solvent contents that a product could not exceed or require a particular type of application technique to be used. Often a target date is established after which technology is expected to be available to meet the established limits. This approach is termed technology-forcing.

The command and control technique requires intimate knowledge of the products to be regulated and is most effective when there are lower volatile organic compound alternatives available. An inherent limitation in this type of regulation is the removal of any incentive to pursue further emission reductions once the volatile organic compound limits are attained and the limited flexibility allowed for the companies being regulated. Also, in the case of technology-forcing limits, if lower volatile organic compound alternatives are not developed before established implementation

dates it has traditionally been difficult for regulatory agencies to relax the emission limits when such limits are federally enforceable limits contained in State Implementation Plans.

B. BUBBLES

Bubbles are an alternative to the command and control approach that instead of treating the pollution source point by point (e.g. product-by-product), the emission sources are treated in the aggregate. Bubbles differ from the command and control approach in that the regulation specifies an emission reduction or volatile organic compound allowance, but industry has the flexibility to determine how it would comply with the regulation. The bubble concept has been described as "a regulatory adjustment whereby a source may wish to overcontrol part of its operation and undercontrol another part to accomplish comparable emission reductions" (Rasnic).

A bubble can take on many permutations and can be fairly complex. For consumer products, one approach using a bubble would be to establish a baseline year average-product volatile organic compound for each company marketing consumer products. This average could encompass all that company's products or selected categories. The company would then be required to reduce this average by X percent each year until the desired emission reductions are met. As can be expected, bubbles entail extensive surveys and record keeping and rely on industry to provide accurate and complete information to the regulatory agency.

C. ECONOMIC INCENTIVES

Another strategy that is gaining increasing attention is the use of economic incentives to encourage the reduction of volatile organic compounds in consumer products. The use of economic incentives does not necessarily entail the collection of fees as the name might imply but is an approach that uses market forces or principles to achieve an environmental goal. In the case of consumer products, that goal would be to reduce volatile organic compound emissions from consumer products by encouraging the prudent use of solvents. The use of economic incentives deserves consideration since it can be a very cost-effective means to reduce emissions while providing industry with considerable flexibility.

Instead of dictating a control technology to achieve the desired emission reductions, economic incentives impose a "price" or economic cost on the pollution source or conduct that creates the pollution, thereby providing industry with the incentive and the flexibility of choosing the most appropriate and cost-effective controls to meet its needs while reducing emissions. There are two general approaches to economic incentives. The first is to impose a fee on the level of solvents used by a company. This could be a graduated fee and one that also increases with time. An annually increasing fee would provide additional incentive for a manufacturer to shift to low-VOC products or lower volatile organic compound

application techniques. Another type of economic incentive is a quota system whereby no fees are collected but a specified amount or quota of solvent can be used by a company and not be exceeded across the company's entire line of products. This quota could then decrease annually until the desired emission reductions are achieved.

D. PRODUCT ELIMINATION

Product elimination or prohibition is another strategy to consider in developing a volatile organic compound regulation. This approach could be used for products where lower volatile organic compound emitting alternative products or practices exist. One example of this approach would be to prohibit the sale of charcoal lighter fluid in California since low-VOC emitting alternatives are available such as electric starters, self-starting charcoal, and chimney lighters.

V.

NEEDS AND IMPACTS

Consumer product regulations will have wide-ranging effects, affecting not only the consumer but the marketer, manufacturer, and associated chemical industries as well. Several areas have been identified that could pose problems in the development of consumer product regulations and that will need special attention. These are briefly described below.

A. NEED FOR MORE INFORMATION

There is a lack of comprehensive information to allow for an accurate emissions estimate. The 1985 emissions estimate is based on the Air Resources Board 1983 Emission Inventory and to develop the estimate, many assumptions had to be made on product usage. Surveys and studies are needed to better estimate total emission of organic compounds from consumer products.

Specifically, to obtain a better understanding of consumer usage patterns, we need to obtain more accurate total data for California and when and where consumer products are used in the state. We also need to separate commercial and institutional usage of consumer products to improve the inventory. Determination of what portion of the total solvent content is emitted into the atmosphere and whether usage patterns have changed over the last several years is also necessary to improve the emissions inventory. In addition, more complete data is needed on the products themselves, however, acquiring product formulation may be difficult due to proprietary concerns. We also need to know which companies are producing each type of consumer product. This type of information, obtained through surveys and studies, will allow for a more accurate consumer products emissions estimate.

B. LIFESTYLE IMPACTS

An important aspect of consumer product regulations is the potential for lifestyle impacts. With consumer product regulations, we are venturing into a new era of air pollution control. Not only will we be asking

industry to help achieve emission reductions, but the public sector as well must make some sacrifices if we are to achieve the desired emission reductions. Some of the changes that may occur with the regulations and that will affect "lifestyles" are as follows:

1. Performance characteristics

Performance characteristics for products may change due to reformulation. Until some products are perfected, they may take longer to dry or to achieve the desired result, and the resulting texture may not be pleasing (e.g. "stickiness"). The frequency and amount of application deemed necessary for the product (underarm products, hairspray) may increase, which will cause an increased usage rate that could lead to increased consumer costs. Application problems due to substitute propellants or pumps may also arise in the case of aerosol products and may not necessarily result in volatile organic compound emission reductions.

2. Availability of complying products

Availability of complying products is also a concern. There should be a continuous supply of quality-assured complying products that are readily available to the consumer, thus encouraging use and discouraging stockpiling. On the other hand, manufacturers and suppliers may decide that it would be more cost-effective to quit marketing certain products in California, rather than reformulate. If this happens, the resultant unavailability of certain products will affect consumer choices.

3. Product costs

Product costs may increase as manufacturers seek to recover any costs associated with research and development for reformulation and product application.

C. INDUSTRY IMPACTS

Regulation of consumer products may affect industry in several ways. Most importantly is the fact that consumer products are distributed nationwide. If a company chooses to formulate products for two separate markets, this could potentially be a financial burden on industry. However, if the low-VOC products developed for California are distributed nationwide, the resultant air quality benefits would be felt nationwide. As mentioned earlier, other states are also developing consumer product regulations. This would tend to force the development of low-VOC products nationwide.

Development of new low-VOC products have associated costs of product development. A new product may require a new or modified production line as well as costs of reformulation. Product testing and toxicity testing are also necessary costs of developing a new product.

D. NEED FOR CONSUMER EDUCATION

A common industry response to regulatory efforts for consumer products, such as product reformulation and a ban on a certain type of product, is that the public will not accept these changes willingly, due to lifestyle impacts. Industry asserts that the public would have to be re-educated to change its personal habits, which industry believes would be very difficult to accomplish. A recent nationwide survey done by Media General and Associated Press, indicates this may not be the case. Out of 1084 respondents, some of the responses were: 72 percent said that pollution appears to have increased within the last 10 years, 75 percent feel that laws against pollution in the United States are too weak, and 75 percent also said they would support and accept a ban on household aerosol products.

Although public awareness of consumer products as a source of air pollution is slowly growing, there is still a need for an ongoing program which will systematically disseminate information to the consumer about how and why these products contribute to air pollution, and why it may be necessary to regulate them. Special emphasis needs to be laid on the fact that, even though the amount of volatile organic compound emissions produced by a single user application for a few seconds may appear trivial, it is the cumulative effect over time from the total user population which is significant in terms of ozone generation. In addition, these emissions are directly tied to population growth, which is increasing in California. Consumer products, as many small point sources dispersed over geographic areas, function collectively as area sources, which makes regulation difficult. Because most large point sources of air pollution have already been regulated, ARB is now turning to previously unregulated categories such as consumer products to achieve further emissions reductions.

Consumer willingness to use alternatives is particularly important since enforcement at the point of use is virtually impossible. Unless national regulations for consumer products are mandated, consumers will always have access to non-complying products through potential black market activity within the state, and from markets outside the state. This makes consumer education particularly critical. Effects on personal health and the environment resulting from consumer product emissions should be part of any education program, particularly information on complying alternative products. Lifestyle impacts must be addressed, including analyses of how industry has induced many of the consumer's perceived "needs" and desires for various product characteristics through the use of advertising. An effective method of distributing this information as widely as possible to the public must then be found.

VI.

SCHEDULE AND APPROACH

Our goal is to implement the mandate under the CCAA to achieve the maximum feasible reduction in volatile organic compounds from consumer products. To ensure that the regulation will be cost-effective, enforceable, and provide the flexibility that a diverse and complex market demands, we will take the steps necessary to encourage an open exchange of ideas and information with the consumer product industry. Described below are our initial goals, prioritization of categories for regulation, and a schedule to realize those goals.

A. GOALS

We propose to achieve by the year 2000 a 50 percent statewide reduction in volatile organic compound emissions from consumer products based on the 1985 ARB Emissions Inventory. Since consumer products are largely an unregulated source of emissions, we are optimistic that this goal can be achieved. We also recognize that this is an ambitious goal, considering the complex nature of the consumer product market, and may need to be revised as additional information is acquired regarding volatile organic compound emissions from consumer products and the options available for reduction.

B. PRIORITIZATION

In setting priorities, several factors were taken into consideration including the potential magnitude of emissions from each category of consumer products, staff expertise, the availability of lower volatile organic compound products and the likelihood of success. Based on our analysis we have established the following prioritization for regulation development:

Category	Rank
Personal Care Products	1
Household Products	2
Automotive/Industrial	3
Pesticides	4

With the limited information currently available, we believe this prioritization is reasonable and represents the order which we believe consumer product regulations will be developed. However, while they are numerically ranked, we expect the first three categories will be considered simultaneously. Further prioritization of the individual products within each category is not possible at this time. We expect that after discussions with industry and when a survey of consumer products in California is completed, we will be able to identify those products that will have the most potential for providing emission reductions.

C. SCHEDULE

We have summarized our schedule or action plan in Table 3. The first step in the process is to establish our initial contacts with industry. On May 19, 1989, we mailed a survey letter and initial contact to over 550 contacts. A copy of this letter and the attached survey form is included in Appendix B. The information gathered from the survey will be used to create our initial mailing list and to schedule consultation meetings with industry representatives. Over the next several months we intend to conduct numerous informal consultation meetings to solicit information from industry in the development of consumer product regulations. Beginning this summer, we also intend to conduct yearly surveys of companies marketing consumer products in California, to develop an accurate and reliable data base. This survey information will be used in the development of the regulations and to monitor their effectiveness.

The first consumer product regulation to be brought to the Board will be a regulation to reduce volatile organic compound emissions from deodorants and anti-perspirants. This regulation is scheduled for a hearing in October, 1989. The next regulation in the schedule is for the personal care category scheduled for July of 1990, followed by Household Products in January 1991, Automotive/Industrial in July 1991, and Pesticides, July 1992. As discussed in a previous chapter, the exact structure and scope of the consumer products regulations will evolve as more information become available. The schedule suggests that the regulation development will proceed in a linear manner, however, during the process we will be examining other options for emission control such as cross category regulations (e.g. aerosols) and the feasibility of adopting regulations enacted by other states. If these approaches are determined feasible, they will be given a higher priority.

As stated earlier, consumer education will be an important factor in determining the success of consumer product regulations. Our plan is to develop public education information that will help consumers be environmentally aware and be able to select and demand from industry low-VOC consumer products. In addition, we will with the TRG pursue a Suggested Control Measure for aerosol paints (July, 1991). To keep the Board apprised of our efforts, we will also provide the Board with annual status reports on our overall efforts and update the plan as needed.

Table 3

Consumer Product
Action Plan

Action	Tentative Schedule
Initial Contact Survey	May 19, 1989
Status Report to Board	July 13, 1989
Industry Consultation Meetings	On-Going
Emissions Survey	On-Going
Deodorants & Anti-Perspirants Regulation	October 1989
Determine Feasibility of Aerosol Regulation*	December 1989
Determine Feasibility of Adoption of New Jersey/Texas/New York Consumer Products Regulations*	December 1989
Personal Care Regulation	July 1990
Annual Status Report to Board	July 1990
Household Products Regulation	January 1991
Automotive/Industrial Regulation	July 1991
Annual Status Report to Board	July 1991
Aerosol Paints Suggested Control Measure	July 1991
Pesticides Regulation	July 1992
Annual Status Report to Board	July 1992

* If determined to be feasible, will begin development of regulations.

REFERENCES

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Rasnic, John B., "The Finishing Line", AFD/SME's Quarterly on Finishing and Coatings Technology, October 1986.

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Stewart, Richard B., "Controlling Environmental Risks Through Economic Incentives", Columbia Journal of Environmental Law, Vol. 13, No. 2, 1988.

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Appendix A

California Clean Air Act
(Section 41712)

SEC. 26. Section 41712 is added to the Health and Safety Code, to read:

41712. (a) On or before January 1, 1992, the state board shall adopt regulations to achieve the maximum feasible reduction in reactive organic compounds emitted by consumer products, if the state board determines that adequate data exists for it to adopt the regulations.

(b) The state board shall not adopt regulations pursuant to subdivision (a) unless the regulations are technologically and commercially feasible, and necessary to carry out this division.

(c) For purposes of this section, a "consumer product" means a chemically formulated product used by household and institutional consumers, including, but not limited to, detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; and automotive speciality products but do not include paint, furniture coatings, or architectural coatings.

(d) Prior to January 1, 1994, a district shall adopt no regulation relating to a consumer product which is different than any regulation adopted by the state board for that purpose.

Appendix B

Survey Request Letter and Form

STATE OF CALIFORNIA
AIR RESOURCES BOARD
1102 Q STREET
P.O. BOX 2815
SACRAMENTO, CA 95812

George Deukmejian, Governor

May 12, 1989

Dear Sir or Madame:

California Consumer Product Mailing List Request Form

The California Clean Air Act of 1988, requires the Air Resources Board (ARB) to adopt regulations to achieve the maximum feasible reduction in volatile organic compounds (VOC) from consumer products. The California Clean Air Act also requires the ARB to consider the technological and commercial feasibility of regulations for consumer products. The regulations are to be adopted on or before January 1, 1992.

To implement this requirement of the California Clean Air Act, we are beginning the development of regulations to reduce solvent emissions from consumer products. We recognize that this will not be a simple task considering the diversity and complexity of the consumer products industry. Industry input will be a vital component of this regulatory process and essential to the success of our efforts. We are committed to take the steps necessary to encourage an open exchange of ideas and information and insure input from industry that is representative of the consumer product industry as a whole.

As a first step, we intend to create a consumer product mailing list. This mailing list will be used to inform and solicit information from industry in the development of consumer product regulatory strategies. To ensure wide participation and input from all affected parties, we are requesting interested parties complete the attached Consumer Products Mailing List Request form. If you are interested in being a part of this process, please complete the attached form and return it to the address listed on the request form.

We hope you will consider participating in this process. By working together, we can develop regulations for California that will achieve both a reduction in emissions of volatile organic compounds from consumer products and maintain continued growth of the consumer product industry. If you have any questions concerning this process, please contact Dan Donohoue, Manager, Solvents Control Section, at (916) 322-8283 or Peggy Vanicek, Associate Air Pollution Specialist, at (916) 327-1517.

Sincerely,

Peter D. Venturini, Chief
Stationary Source Division

Consumer Product Mailing List Request

Name of Contact _____ Phone (___)_____

Company Name _____

Mailing Address _____
(Number or PO Box) (Street)

_____
(City) (State) (Zip)

Do you manufacture consumer products for sale in California?
[ ] yes [ ] no

If yes, please identify the appropriate product(s) categories.

1. [ ] Personal Care Products: (e.g. deodorants, anti-perspirants, hair care products, shaving lather)

2. [ ] Automotive Products: (e.g. refrigerants, cleaners: engine, brake, windshield, choke)

3. [ ] Aerosol Paints

4. [ ] Adhesives & Sealants

5. [ ] Household Pesticides/Insecticides

6. [ ] Household Products (e.g. cleaners, deodorizers, laundry products)

7. [ ] Other, please specify:_____

Do you provide other services or support to the consumer products industry? [ ] yes [ ] no

If yes, please explain: _____
_____

Return to: Air Resources Board
P.O. Box 2815
Sacramento, CA 95812
Attention: Solvents Control Section - Tom Evashenk