

Report No. SR97-07-01

Impact of Consumer Products on California's Air Quality

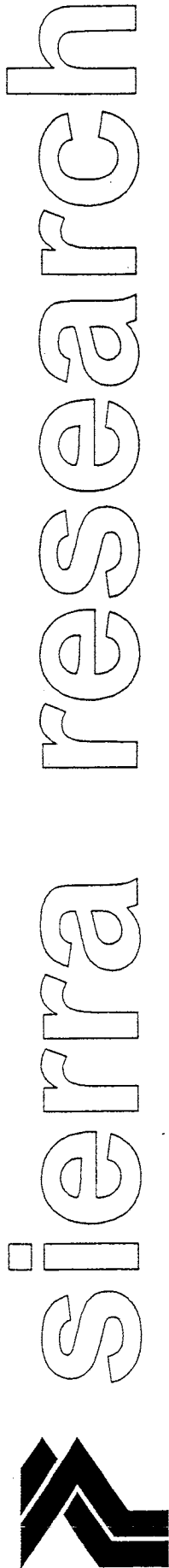
prepared for:

**Chemical Specialties Manufacturers
Association and the
Cosmetic, Toiletry, and Fragrance
Association**

July 1997

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Fragrance Association**

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SUMMARY

The California Air Resources Board (CARB) has adopted regulations intended to reduce emissions of volatile organic compounds (VOCs) from consumer products as a means of improving air quality. Consumer products range from hair sprays to car polishes to windshield washer fluids. In addition to regulations that are already in place, CARB is considering further consumer product regulations. These regulations are part of the 1994 California State Implementation Plan for Ozone (Ozone SIP). However, the SIP does not address the issue of the importance of consumer product VOC emissions on California's air quality in general, nor does it give any indication of how much air quality will improve as a result of further consumer product regulations.

Given this, the Chemical Specialties Manufacturers Association and the Cosmetic, Toiletry, and Fragrance Association commissioned Sierra Research, Inc., and Systems Applications, Inc., to conduct a study to evaluate the need for further consumer product regulations. The study involved a detailed review of the consumer products inventory for the Sacramento and South Coast areas of California as well as Urban Airshed Model (UAM) simulations of ozone formation in both areas.

The findings of the study include the following:

1. The magnitude of consumer product VOC emissions and the benefits of consumer product controls are both substantially overestimated in the Ozone SIP; -
2. VOC emissions from consumer products are 50% less photochemically reactive (e.g., form 50% less ozone) than average VOC emissions from other sources;
3. Consumer product VOC emissions have far less impact on air quality in California than do VOC emissions from other sources, including on- and off-road vehicles, industrial solvent usage, and stationary combustion sources; and
4. No further consumer product regulations are necessary to achieve the air quality goals of the Ozone SIP if all other specified controls are implemented in the South Coast and Sacramento areas.

INTRODUCTION

The term "consumer products" is used in the field of air quality to denote a large number of ubiquitous products that are used by the public in everyday life. These products range from hair sprays to car polishes to insecticides. The one thing that this disparate collection of products has in common is that their formulations include reactive volatile organic compounds (VOCs) that, to some degree, evaporate into the air. Once in the atmosphere, VOCs from consumer products and the myriad of other sources of such compounds can, in combination with oxides of nitrogen (NO_x), participate in photochemical reactions that result in the formation of ozone. Ozone is the principal component of the "smog" observed in many urban areas of California during the summer months and, to some degree, year-round in southern California.

Given that the use of consumer products results in the emission of volatile organic compounds, the California Air Resources Board (CARB) has promulgated regulations to reduce the magnitude of these emissions and has plans to investigate the feasibility of regulations requiring additional controls. These plans are part of the 1994 California State Implementation Plan for Ozone (Ozone SIP).^{1*} The SIP calls for additional control measures that would achieve an additional 55% reduction in volatile organic compound emissions from consumer products over and above the estimated 30% reduction that CARB estimates will result from existing regulations. However, what is not clear from the Ozone SIP is how important a role volatile organic compound emissions from consumer products play with respect to California's air quality.

Given this uncertainty, the Chemical Specialties Manufacturers Association (CSMA) and the Cosmetic, Toiletry, and Fragrance Association (CTFA) commissioned Sierra Research, Inc. (Sierra) and System Applications, Inc. (SAI) to perform a study to evaluate the magnitude of current and future volatile organic compound emissions from consumer products and the impact of these emissions on ambient ozone levels in California. The overall goal of the study was to review the data and other technical information that form the basis for the Ozone SIP, and to assess the role consumer product emissions play with respect to air quality in California. The results of this study are intended to provide a point of comparison with the data used by CARB in developing the Ozone SIP and to provide direction regarding the need for additional reductions in emissions from consumer products.

* Superscripts denote references provided in the final section of this report.

In performing the study, Sierra and SAI executed the following tasks:

1. Two sets of Urban Airshed Model (UAM) simulations were performed using the data sets and conditions upon which the Ozone SIP is based to assess the impact of changes in consumer product emissions on ambient ozone levels in the Sacramento nonattainment area in 2005 and in southern California's South Coast Air Basin (SCAB) in 2010;
2. Updated consumer product emission inventories, including chemical speciation profiles, were prepared for Sacramento and SCAB for 1990 and future years; and
3. These updated inventories were used to compare the relative importance of consumer product emissions to volatile organic compound emissions from other sources on both a mass and a reactivity-weighted basis.

IMPACT OF CONSUMER PRODUCT CONTROLS ON OZONE SIP AIR QUALITY MODELING ANALYSIS

As noted previously, one goal of this study was to assess the contribution of consumer products to ozone concentrations in the air quality modeling demonstrations in the 1994 Ozone SIP. In the SIP, two regions were key to the demonstrations showing ozone attainment: (1) the Sacramento region was to attain the one-hour National Ambient Air Quality Standard (NAAQS) for ozone* by the year 2005, and (2) the South Coast Air Basin (SCAB) was to attain this standard by the year 2010. Attainment was demonstrated in the SIP via Urban Airshed Model (UAM) runs that showed the 120 ppb NAAQS was not exceeded in the attainment year when the emissions inventory was adjusted to account for the control measures in the SIP.

The set of emissions controls included in the SIP that showed attainment was not assessed for the relative effectiveness between individual source categories in reducing ozone.² The only relative effectiveness evaluation included in the Ozone SIP was a presentation showing the mass of emissions reduced for various source categories. Thus, there existed an implicit assumption of equal ozone-forming effectiveness per unit of mass emitted between the various sources.

As noted above and discussed in more detail below, the consumer product emissions of concern are VOCs, which, for consumer productions, are dominated by the solvents and/or propellants used in consumer products. Among the most widely used solvents in consumer products are butane, propane, and ethanol. All three of these compounds are recognized to have much lower ozone-forming potential than the average VOC found in urban atmospheres. Therefore, it is expected that the ozone reductions achieved by controlling consumer product emissions would have a relatively small impact on the overall attainment demonstration. In fact, the UAM modeling performed in this study shows that attainment still could have been demonstrated for SCAB and Sacramento without reducing consumer product emissions beyond the levels achieved by existing CARB regulations.

* While the actual NAAQS for ozone is 120 ppb, the U.S. EPA does allow a UAM simulation to be recognized as showing attainment if the highest one-hour value is less than 125 ppb ozone. The main reason for this allowance stems from the parts-per-hundred-million (pphm) units commonly used when the standard was originally set at 12 pphm, which was in keeping with the instrumentation available. Since that time, more precise instrumentation (and consequently the ppb [parts-per-billion] units) has become more commonplace so that a "round-off" of up to 5 ppb is currently tolerated.

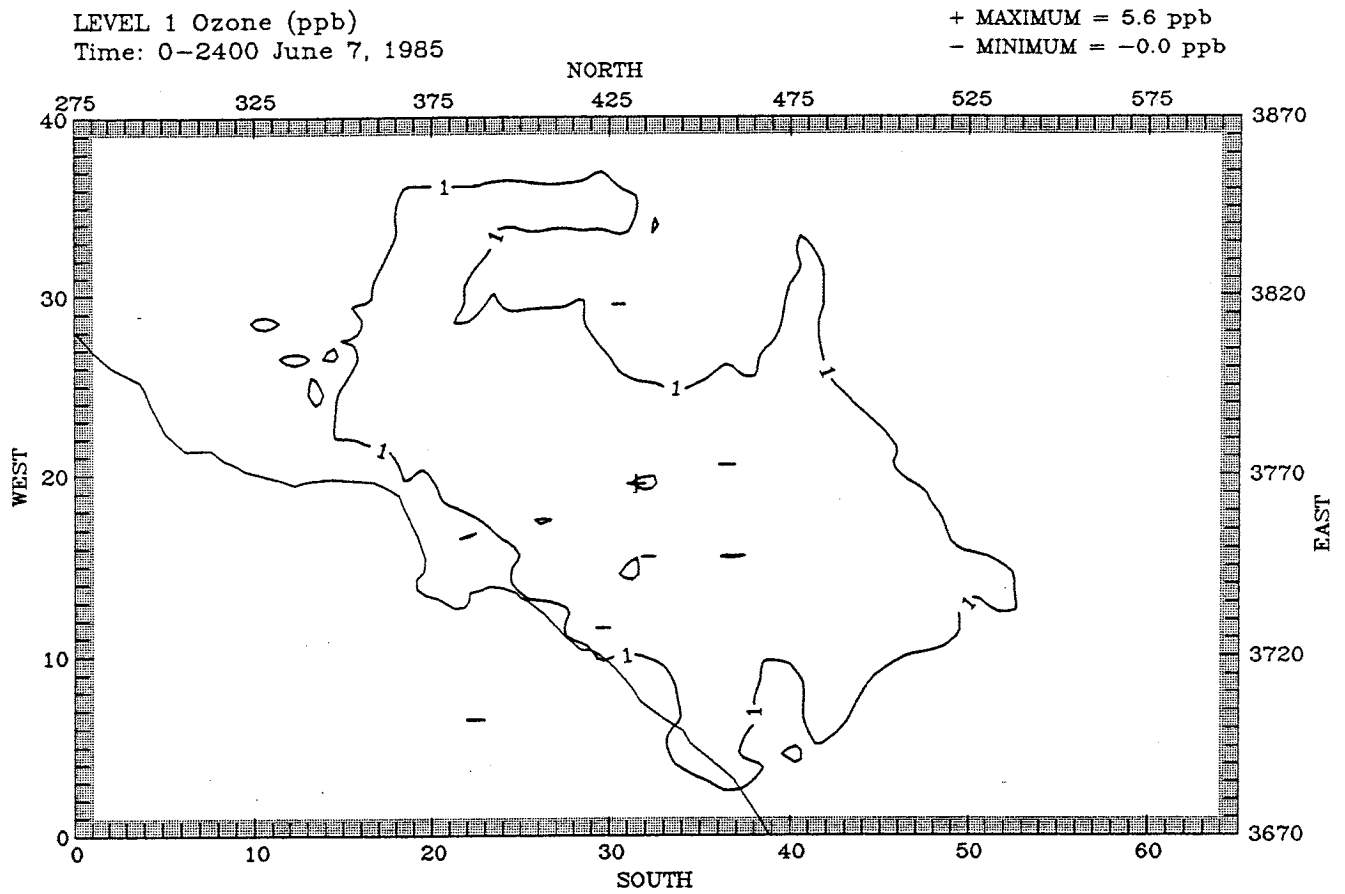
For the SCAB in 2010, the 1994 Ozone SIP attainment simulation using the UAM showed a maximum one-hour level of 122.3 ppb on the third day of the three-day simulation. This simulation included an assumed 85% reduction in consumer product emissions relative to the 1990 baseline. When consumer product emission controls were returned to the 30% control level resulting from the existing regulations, the subsequent UAM simulation showed that the peak hourly ozone value increased to 124.9 ppb, a level just below the allowed limit, but still demonstrating attainment. For Sacramento, a similar result was obtained. The UAM simulation in the Ozone SIP showing attainment in 2005 projected a maximum one-hour ozone value of 124.2 ppb using an assumed 38% reduction in consumer product emissions. When the control on consumer product emissions was relaxed to the 30% level associated with the current controls, the maximum one-hour ozone value increased to 124.5 ppb, which again indicates attainment with the NAAQS for ozone. Additional details regarding the UAM modeling analysis are presented in Appendix A.

Figure 1 shows the difference in ozone concentrations between the UAM simulation that includes the 85% reduction in consumer product emissions specified in the Ozone SIP for SCAB in 2010 and the simulation where only the 30% reduction for the existing regulations is assumed. The figure shows differences in ozone levels for the two simulations across the SCAB modeling region. As shown, the maximum increase in ozone levels in the absence of additional consumer products control is 5.6 ppb, and in most areas where an increase is observed it is on the order of only 1 ppb. With respect to Sacramento, as shown in Figure 2, the difference between the 38% control level assumed in the SIP and the 30% control level due to the existing regulations has only a negligible impact on ozone levels. The maximum simulated increase in ozone concentration is only 0.3 ppb, and there is no impact in most areas.

Again, the overall conclusions to be drawn from the UAM modeling analysis performed in this study are that:

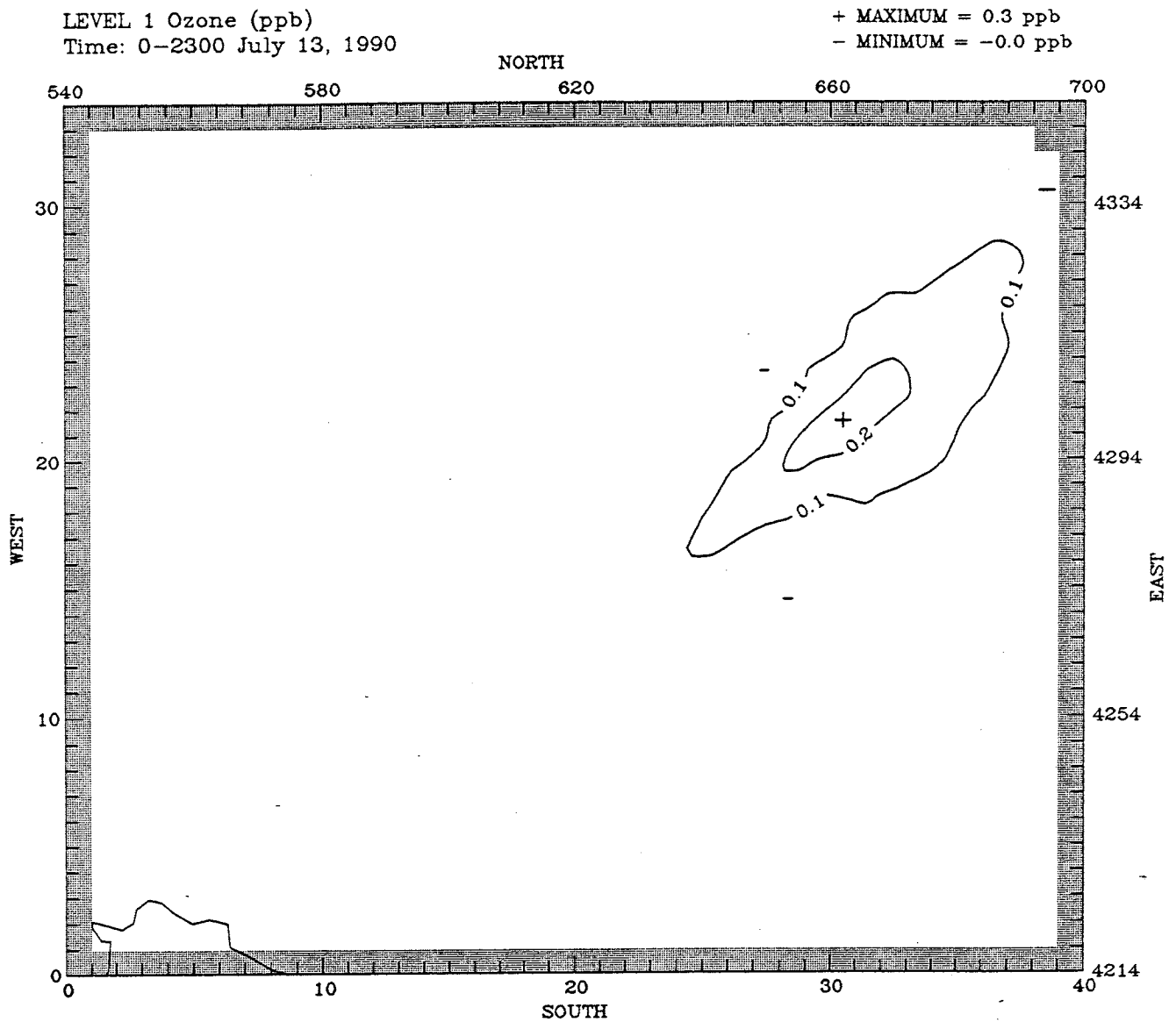
- additional controls on consumer products will have only a marginal impact on California's air quality, and
- additional controls on consumer products are not needed to demonstrate compliance with the NAAQS for ozone based on the 1994 Ozone SIP.

Figure 1



Difference in Maximum Simulated Ozone Concentrations
June 7, 1985. Simulation csma-r3

Figure 2



Difference in Maximum Simulated Ozone Concentrations
Sacramento July 13, 1990. Simulation csma05 minus base05

REVIEW OF THE CALIFORNIA CONSUMER PRODUCTS EMISSIONS INVENTORY

The emissions inventory for consumer products contained in the 1994 Ozone SIP was computed by CARB staff using a methodology last updated in 1989 and data from the mid-1980s and earlier.³ However, in preparing a report to Congress mandated by the Clean Air Act Amendments of 1990,⁴ the U.S. Environmental Protection Agency (EPA) developed a large nationwide database, including chemical composition data, regarding consumer products usage via a survey of the consumer products industry. It was this EPA database, rather than the CARB consumer products inventory, that was selected by Sierra for use in developing a California consumer products inventory for this study.

Using the speciated EPA inventory database as a point of departure, the database was reviewed to eliminate those product categories that are not classified as "consumer products" by CARB. These products include commercial and industrial products subject to local regulation; for example, architectural coatings as well as agricultural and commercial use pesticides.* The next step was to identify compounds in the remaining product categories that either:

- are not emitted to the atmosphere because they are non-volatile, "go down the drain" when products are used or are combusted when products are used; or
- are classified by EPA as having negligible reactivity (e.g., silicone, acetone, and perchloroethylene).

Included in the first category are compounds that are exempt from the consumer product regulations, such as any volatile organic compound with a vapor pressure of less than 0.1mm Hg or consisting of more than 12 carbon atoms, if the vapor pressure is unknown. Based on these definitions and information provided by CSMA^{5,6,7} and CTFA,⁸ these compounds were then excluded from the inventory database. On a mass basis, VOC compounds that either are classified by EPA as having negligible reactivity or are considered to have a low vapor pressure represent 18 percent of the total inventory. The data for percent VOC emitted used in the EPA inventory⁴ to account for down-the-drain

* This review resulted in identification of some, but probably not all, of the industrial and commercial products in EPA's survey that should not be considered as "consumer products" in California. A review and analysis of the confidential database would be required to identify all of these products.

factors were also used here, with the exception of minor modifications. The minor modifications were based on a study of commercial cleaning products,⁹ a study of laundry and dishwashing products,¹⁰ and information supplied by the CTFA.¹¹ Finally, the inventory database was adjusted to account for unknown compounds as well as the typical amount of fragrance in personal care products and misreported compounds.

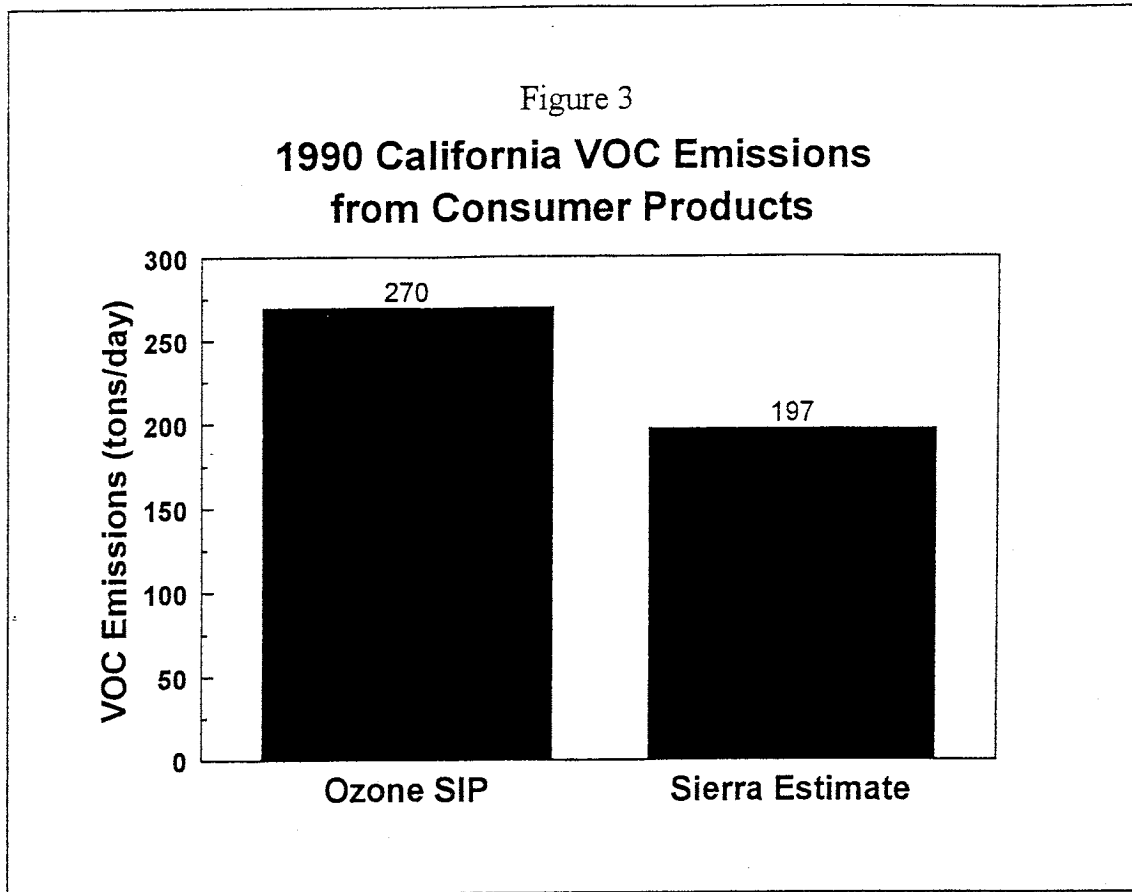
Subsequent to making the modifications to the EPA inventory described above, CARB published a draft report regarding the agency's proposed mid-term consumer products control measures.¹² After reviewing the CARB survey data contained in this report, further adjustments were made to the inventory for several product categories to account for significant discrepancies relative to the EPA database. The categories where these adjustments were made include lubricants, waxes and polishes, bug and tar remover, antifreeze, windshield de-icers, paint removers and coating-related products.*

After adjusting the 1990 EPA inventory for the U.S. to account for the above changes, sales-weighted average emission estimates were computed for California, the SCAB and the Sacramento Air Basin. These sales-weighted average emissions were estimated based on the proportion of the total U.S. population residing in California, the SCAB and the Sacramento Air Basin using 1990 U.S. Census data.¹³ A detailed summary of the VOC emissions inventories for consumer products developed by Sierra is presented in Appendix B.

Figure 3 compares the statewide consumer product inventory for 1990 computed by Sierra, in tons per day of VOC emitted, with the 1990 inventory presented in the Ozone SIP. It is important to note that both inventories represent uncontrolled consumer product emissions. A comparison of the two inventories shows that the Sierra estimates are approximately 25 percent lower than the estimates used by CARB in the Ozone SIP. Similarly, Figures 4a and 4b compare the 1990 baseline mass emission estimates for the SCAB and Sacramento areas, respectively, to those contained in the Ozone SIP. These estimates show that the 1990 Sierra estimates are approximately 25 percent lower for the SCAB and Sacramento than the CARB estimates contained in the Ozone SIP.

Projections of future VOC emissions from consumer products in the absence of controls were also developed and compared to those contained in the Ozone SIP for the SCAB and Sacramento. These comparisons are shown in Figures 5a and 5b. In performing these projections, CARB growth factors were used,¹⁴ along with CARB control factors for existing consumer product regulations^{15,16} and those for future regulations contained in the Ozone SIP. As Figures 5a and 5b show, Sierra's inventory estimates are again lower than those reported by CARB in the Ozone SIP, reflecting the differences in the 1990 baseline inventories.

* We believe that further review of the recent CARB survey data would identify additional instances where EPA's consumer and commercial products data overestimate actual consumer products emissions in California



Using the uncontrolled VOC inventories for consumer products and CARB's control factors for the various phases of the agency's consumer product regulations, emission reduction estimates were computed for Sacramento and the SCAB. Figures 6a and 6b present these results, along with CARB's estimates from the Ozone SIP. As one would anticipate, the Sierra estimates of the total emission reductions in tons per day are considerably smaller than those claimed by CARB staff due primarily to the lower 1990 baseline emissions inventory. For the SCAB, the reductions are 20 tons per day less (relative to the 1990 baseline) than the estimates used for the Ozone SIP for the combined near-term, mid-term and long-term measures. The differences between the two sets of estimates for Sacramento are much smaller due to the smaller differences in the baseline emission inventory estimates.

The data embodied in Figures 6a and 6b are recast in Figures 7a and 7b, which show the CARB and Sierra consumer products emissions inventory estimates for Sacramento and the SCAB as a function of time. Despite the smaller reductions attributed to controls, the Sierra inventory estimates are less than or equal to the CARB estimates at any point in time.

Figure 4a

**1990 Sacramento VOC Emissions
from Consumer Products**

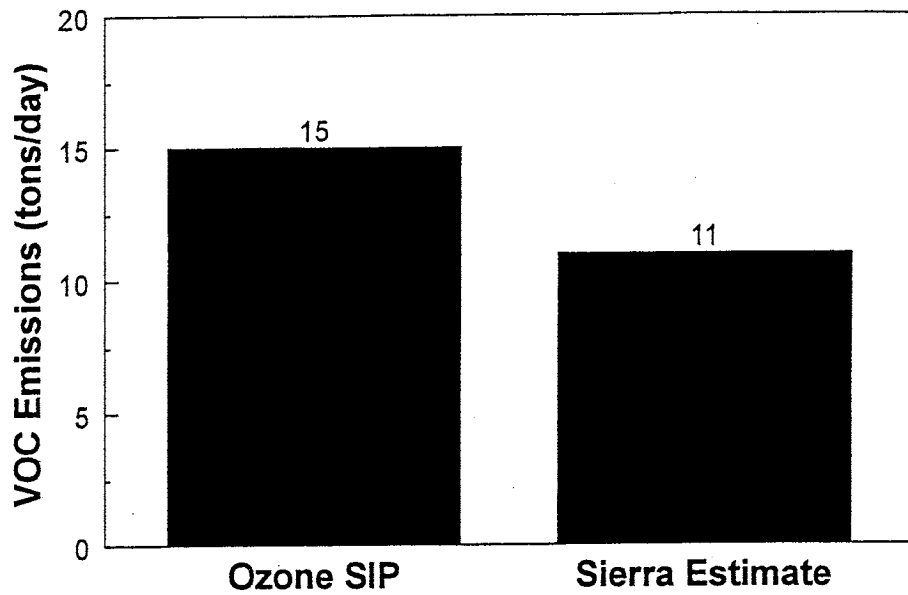


Figure 4b

**1990 South Coast VOC Emissions
from Consumer Products**

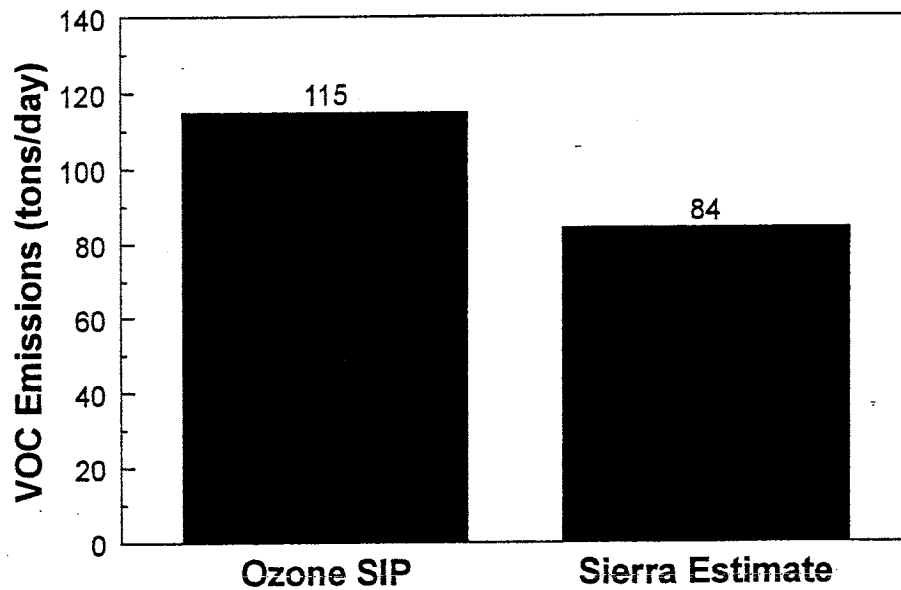


Figure 5a

**2005 Sacramento Projected VOC Emissions
from Consumer Products - No SIP Controls**

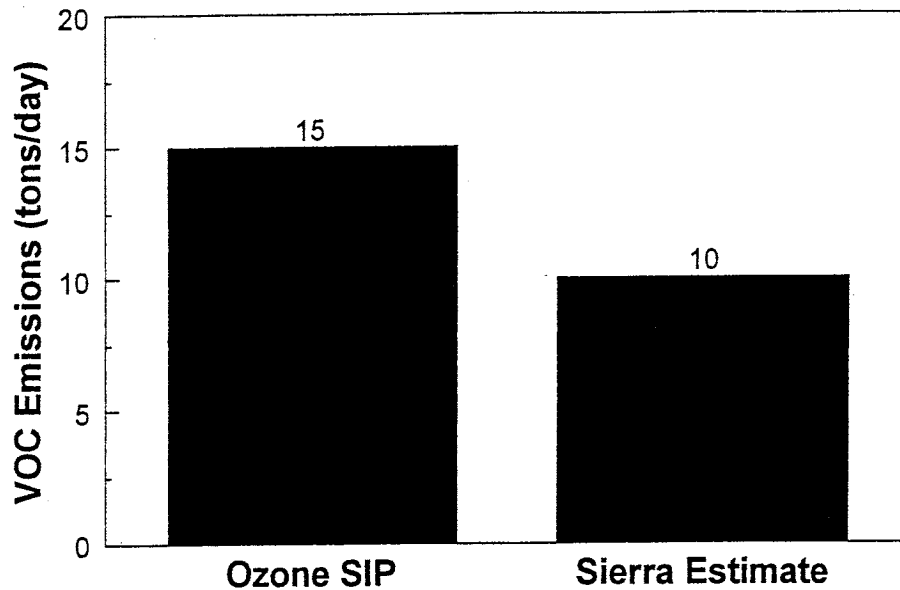


Figure 5b

**2010 South Coast Projected VOC Emissions
from Consumer Products - No SIP Controls**

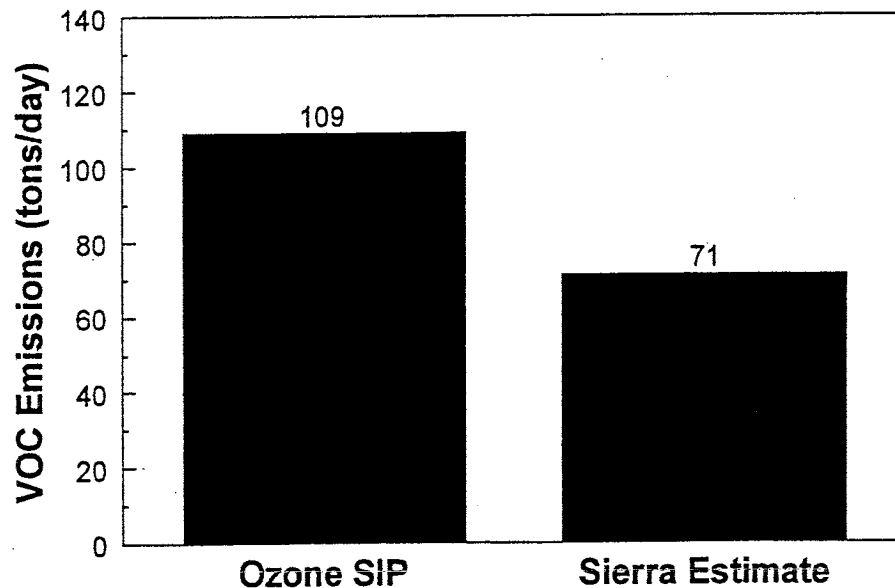


Figure 6a

2005 Sacramento VOC Emission Reductions Relative to 1990 Baseline

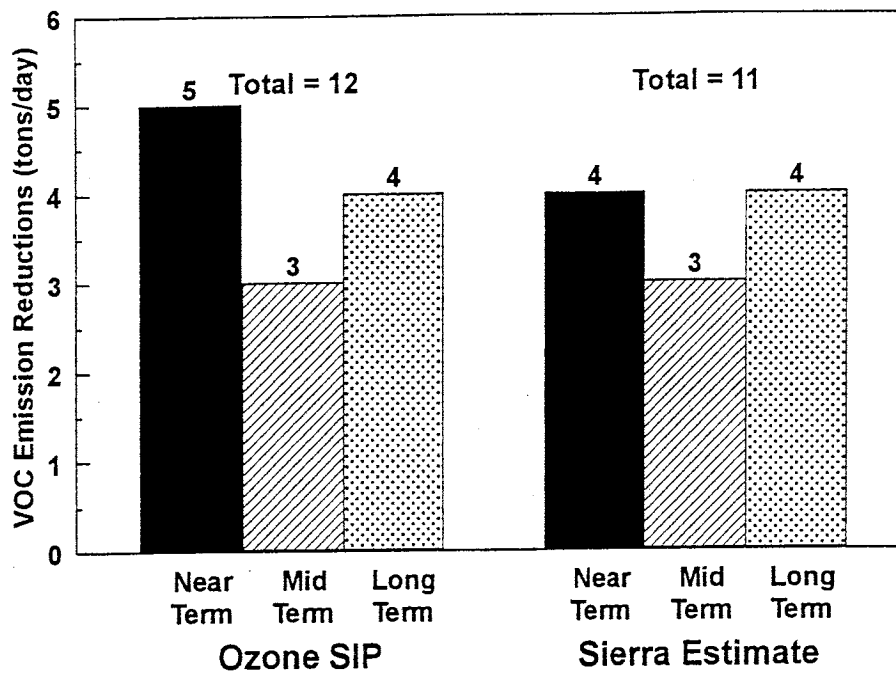


Figure 6b

2010 South Coast VOC Emission Reductions Relative to 1990 Baseline

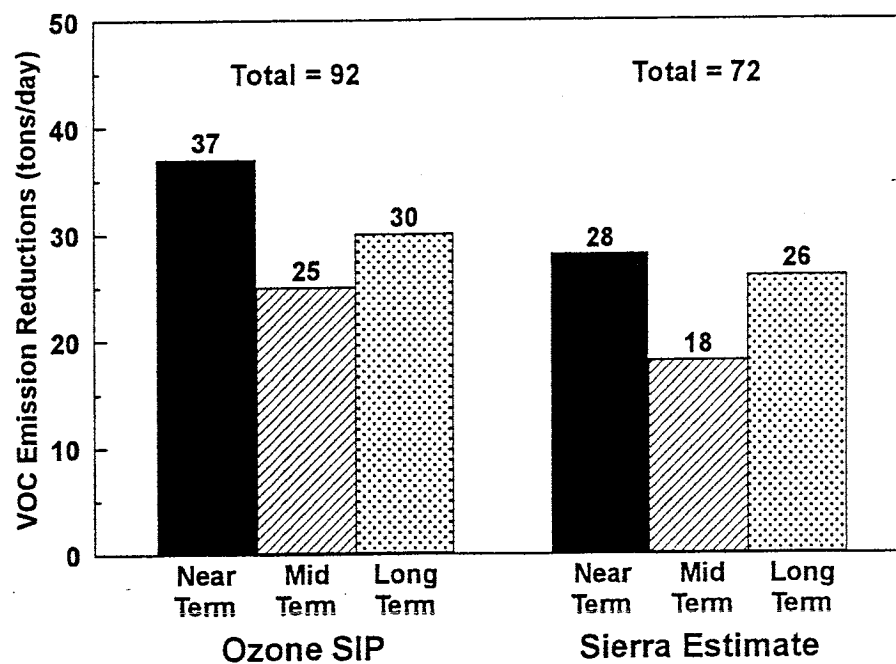


Figure 7a

Sacramento VOC Projected Emissions from Consumer Products with 1994 SIP Controls

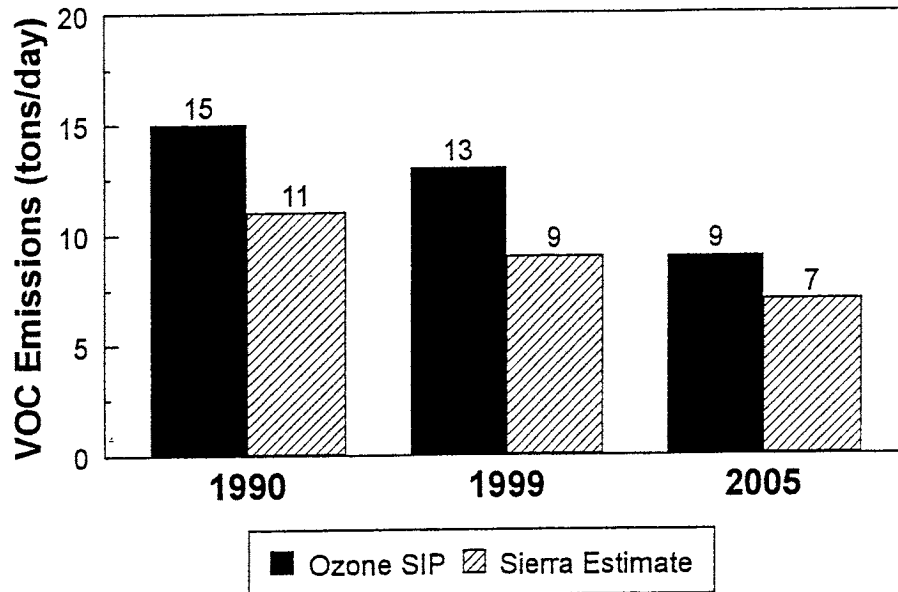
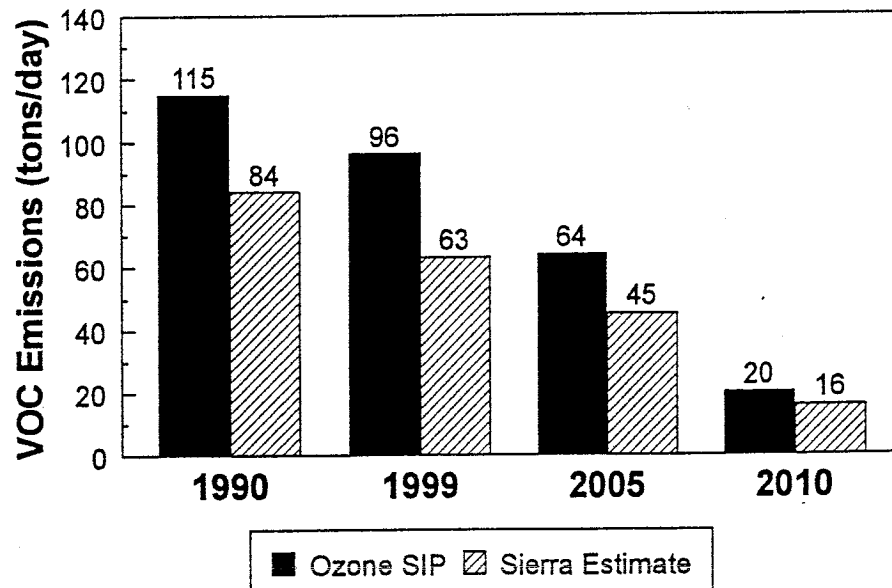


Figure 7b

South Coast VOC Projected Emissions from Consumer Products with Ozone SIP Controls



Overall, the main finding arising from the inventory review is that CARB appears to have overestimated the uncontrolled emissions inventory for consumer products. One direct consequence of this is that the ton per day emission reductions claimed for consumer product control measures in the Ozone SIP are overstated. In addition, based on the findings of the inventory analysis and the results of the air quality modeling analysis addressed previously, the Ozone SIP significantly overstates the ton per day reductions needed in consumer products emissions to achieve the state's air quality goals.

PHOTOCHEMICAL REACTIVITY OF CONSUMER PRODUCT EMISSIONS

In regulating mobile source emissions, CARB in 1990 as part of its Low-Emission Vehicle program moved from a control philosophy based on simply reducing the mass of hydrocarbon emissions to one of reducing the "reactivity" of emissions. To this end, CARB adopted¹⁷ vehicle emission standards that take into account the "ozone-forming potential" (OFP) of hydrocarbon emissions based on the "Maximum Incremental Reactivity" (MIR) concept developed by researchers at the University of California at Riverside. The concept of reactivity adjustment as used by CARB involves MIR "factors" that reflect the grams of ozone-forming potential associated with the emission of one gram of an individual hydrocarbon species. Higher values that reach an upper limit of about 10 indicate "more reactive" compounds, while lower values that range between 0 and 1 indicate "less reactive" compounds. The total OFP of emissions from a vehicle or other hydrocarbon source can be computed by multiplying the MIR value for each compound by the emission rate of that compound and then summing over all compounds emitted from the source.

In order to develop a reactivity-weighted consumer products inventory, the adjusted 1990 EPA database described in the previous section was "speciated" using the complementary EPA database regarding the chemical composition of consumer products. This speciated inventory was then used in combination with MIR values for each species to develop an overall MIR value for consumer products. MIR values used in this study were taken first from lists of "official" and "unofficial" MIRs obtained from CARB staff by CSMA,¹⁸ and then from draft CARB data summaries for consumer products.¹⁹ For those species where no MIR value was available, values for other compounds were assigned based on similar chemical structure or, in the case of mixtures, overall properties. Excluded from the MIR calculation were compounds not emitted to the atmosphere and species considered to be non-reactive in developing the adjusted mass emissions inventory for consumer products. A listing of compounds excluded as not emitted to the atmosphere or as non-reactive is presented in Appendix B, and a listing of MIR values is provided in Appendix C.

Using this approach, the MIR value for consumer product emissions was estimated to be 1.33 grams of OFP per gram of VOC emitted. Not surprisingly, the 1.33 MIR value for consumer products is close to the 1.34 value for ethanol, which is a major ingredient in many products. The 1.33 MIR value is somewhat higher than the value of 0.88 grams of OFP per gram of VOC emitted from consumer products that was estimated using the consumer product inventory and speciation profiles²⁰ that were incorporated into the Ozone SIP. One reason for this difference is that CARB species profiles for consumer

products used in the Ozone SIP addressed only a few actual product types (aerosol propellants and solvents, etc.), while the values developed in this study address all the consumer product categories.

The MIR value for consumer products after implementation of CARB's existing consumer product regulations was also estimated. This value was identical to the 1.33 value computed in the absence of controls, indicating that the VOC emissions from the products currently regulated by CARB have approximately the same reactivity as the average of the remaining products that are to be regulated by the mid- and long-term control programs.

The significance of the consumer product mass emissions inventory and MIR value with respect to California's air quality is addressed in the next section.

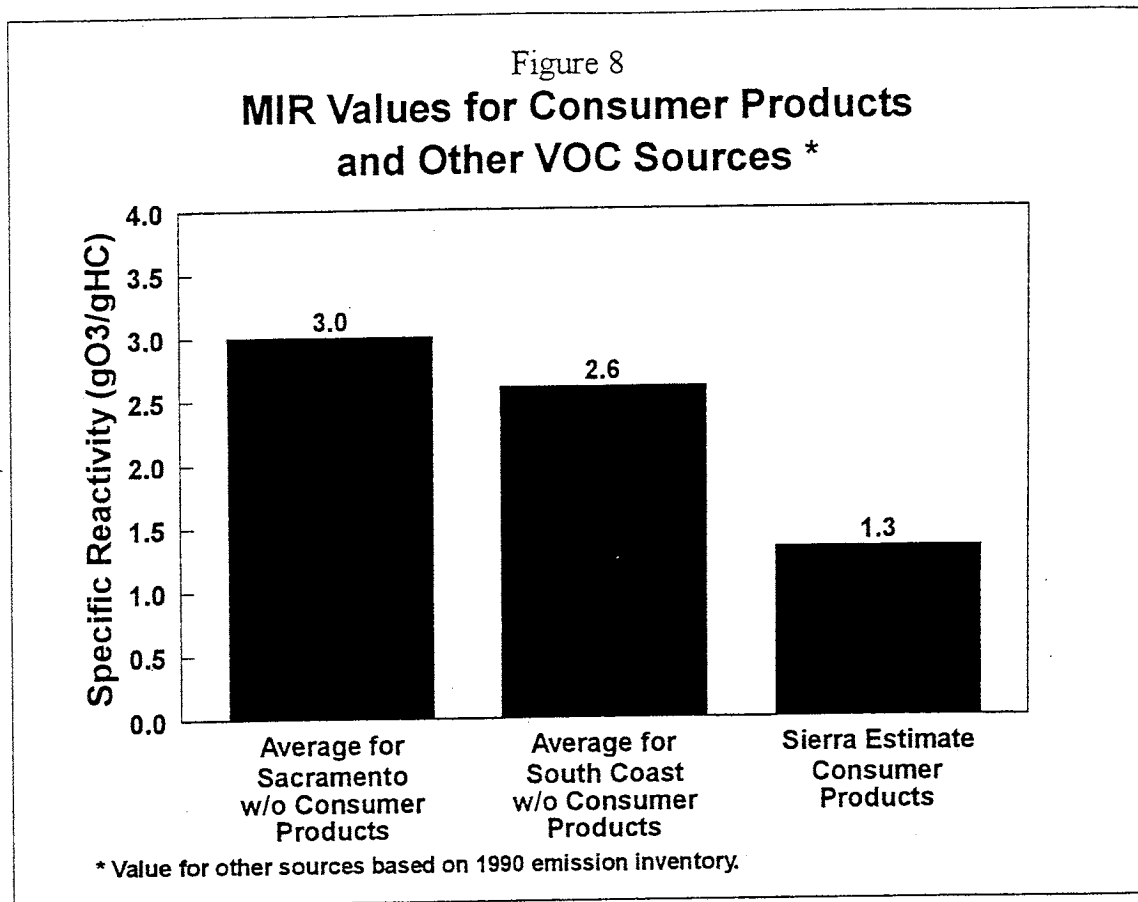
RELATIVE IMPACT OF CONSUMER PRODUCT EMISSIONS ON CALIFORNIA AIR QUALITY

To put the relative impact of consumer product emissions on California air quality into perspective, a comparison is needed using emission inventories and MIR values for other sources of hydrocarbon emissions (including other VOCs). In this study, the CARB VOC emission inventories contained in the Ozone SIP were selected for use. Anthropogenic sources were allocated among the following categories:

- On-Road Vehicle Exhaust Emissions
- On-Road Vehicle Evaporative Emissions
- Off-Road Vehicle Emissions
- Solvent Usage
- Oil Production and Marketing
- Combustion Sources
- Industrial Processes
- Miscellaneous Processes

MIR values for each source category listed above were computed by matching the sources contained in those categories with CARB species profiles based on CES codes and the MIR values listed in Appendix C. The one exception to this was the on-road vehicle exhaust category, where an MIR of 3.42 grams of OFP per gram of emissions was assumed to apply in 1990 and a value of 2.94 was assumed to apply in 2005 and 2010. These values of 3.42 and 2.94 were developed by CARB for Transitional Low Emission Vehicles (TLEVs) operating on "conventional gasoline" and Low Emission Vehicles (LEVs) operating on Phase 2 reformulated gasoline, respectively.²¹ Separate calculations were performed for the South Coast and Sacramento Air Basins since there are differences in the types and mixes of sources found in the different areas. Additional details regarding the results of these calculations are presented in Appendix D.

The average MIR values for volatile organic compound sources other than consumer products, based on the 1990 inventory for Sacramento and the South Coast Air Basins, are compared in Figure 8 to the MIR value estimated here for consumer products. As shown, using this approach, the reactivity of consumer product VOC emissions is roughly half that of the averaged VOC emissions from other sources. Put in another way, based on the MIR approach, each ton of VOC from other sources is equivalent in terms of its impact on air quality to two tons of VOC emissions from consumer products.



The contribution of consumer products to the 1990 baseline VOC and OFP inventories, relative to the other source categories, is shown for Sacramento in Figures 9a and 9b and for the SCAB in Figures 10a and 10b. For both areas, consumer products are a modest source of VOC emissions and a much smaller contributor to the OFP inventory. These figures (particularly those for the OFP inventory) show that, for 1990, the impact of consumer product emissions on the total inventory and therefore California air quality was minor compared to the impacts from other sources.

In addition to the 1990 baselines, OFP inventory projections were developed for 2005 for the Sacramento area and 2010 for the SCAB. CARB forecasting values for growth and control contained in the Ozone SIP inventory were used to develop these projected inventories. Figures 11a-c and 12a-c show OFP inventories for Sacramento and the South Coast, respectively, for the following three scenarios:

- a baseline case assuming no SIP controls on any source;
- a case with all SIP controls in place, including those applicable to consumer products; and
- a case where all SIP controls are assumed to be in place excluding the mid- and long-term consumer products measures.

Figure 9a

1990 Sacramento VOC Emission Inventory

(Total = 219 tons/day)

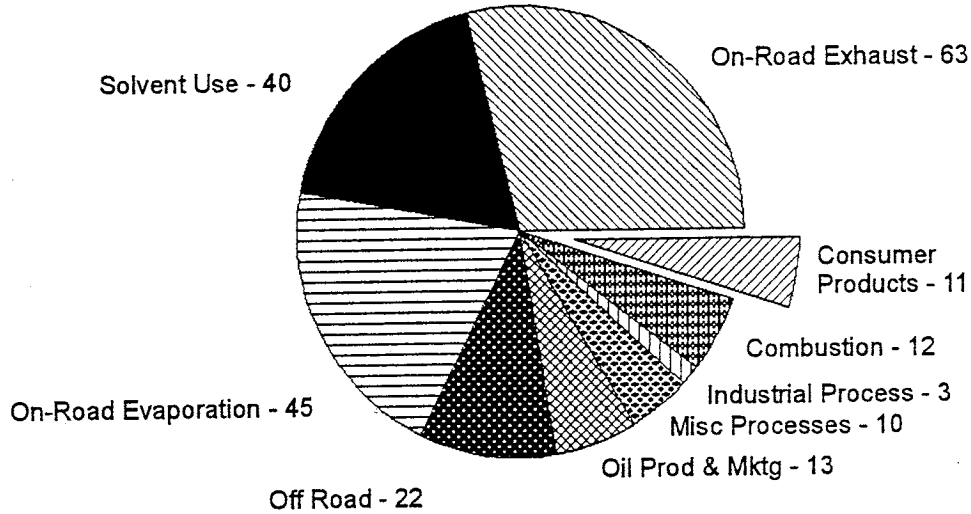


Figure 9b

1990 Sacramento Ozone Forming Potential Inventory

(Total = 648 tons/day)

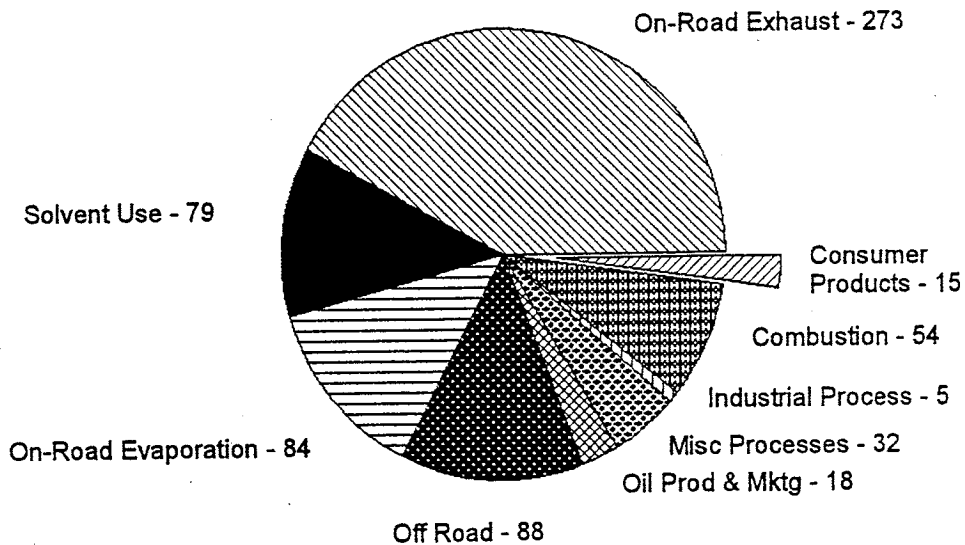


Figure 10a

1990 South Coast VOC Emissions Inventory

(Total = 1,493 tons/day)

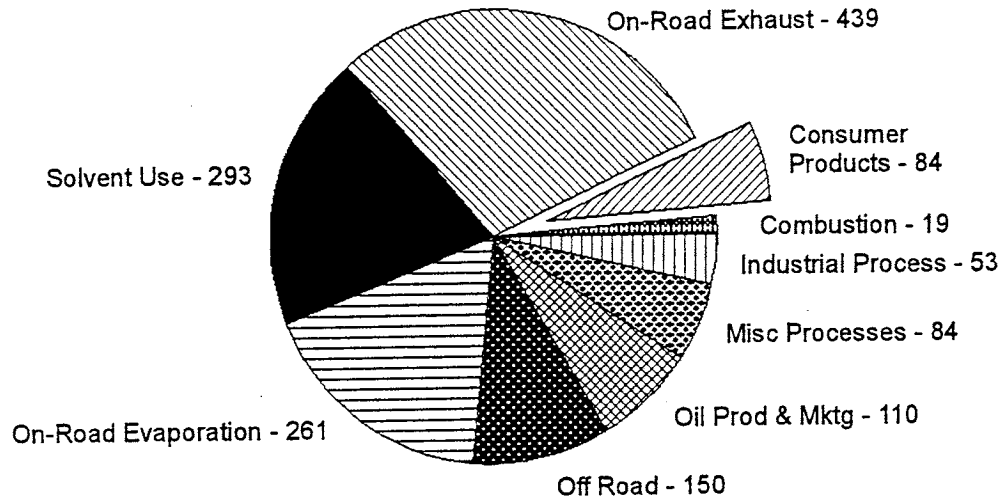


Figure 10b

1990 South Coast Ozone Forming Potential Inventory

(Total = 3,749 tons/day)

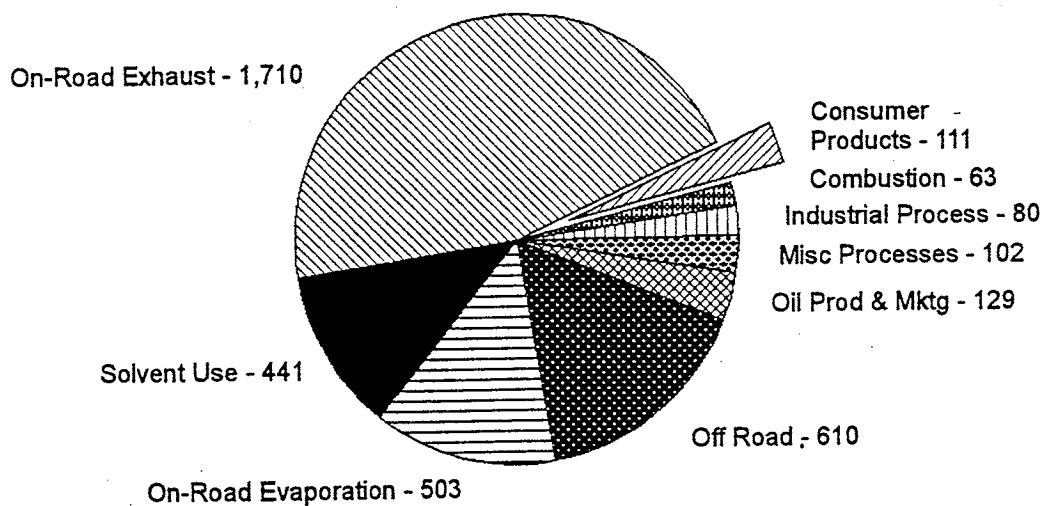


Figure 11a

**2005 Sacramento Ozone Forming Potential Inventory
Baseline Case - No SIP Controls**

(Total = 433 tons/day)

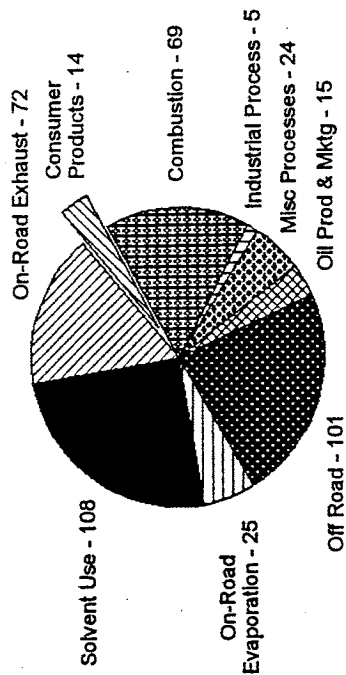


Figure 11b

**2005 Sacramento Ozone Forming Potential Inventory
All SIP Controls Including Consumer Products**

(Total = 357 tons/day)

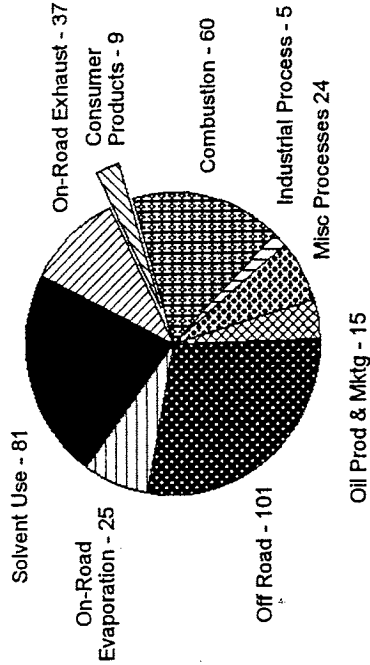


Figure 11c

**2005 Sacramento Ozone Forming Potential Inventory
All SIP Controls Excluding Consumer Products**

(Total = 362 tons/day)

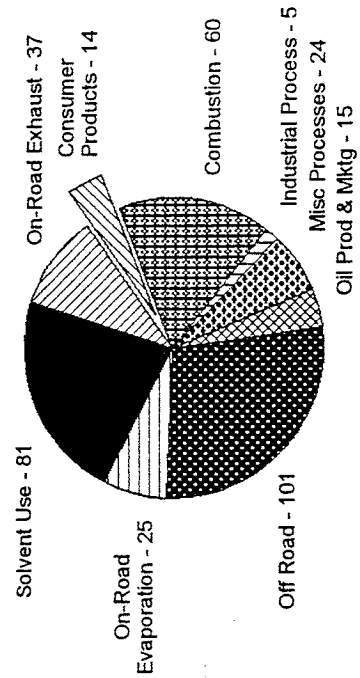


Figure 12a

**2010 South Coast Ozone Forming Potential Inventory
Baseline Case - No SIP Controls**

(Total = 2,106 tons/day)

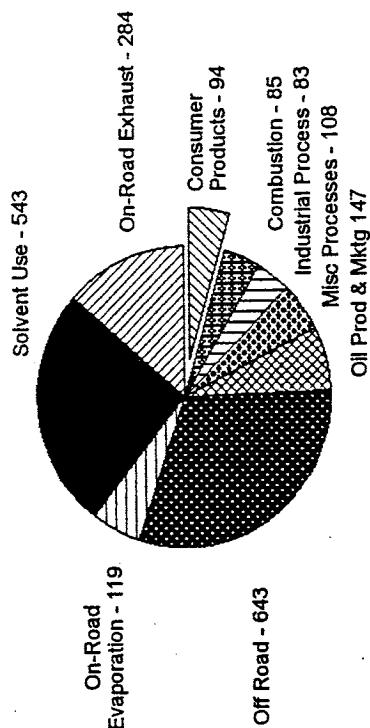


Figure 12b

**2010 South Coast Ozone Forming Potential Inventory
All SIP Controls Including Consumer Products**

(Total = 703 tons/day)

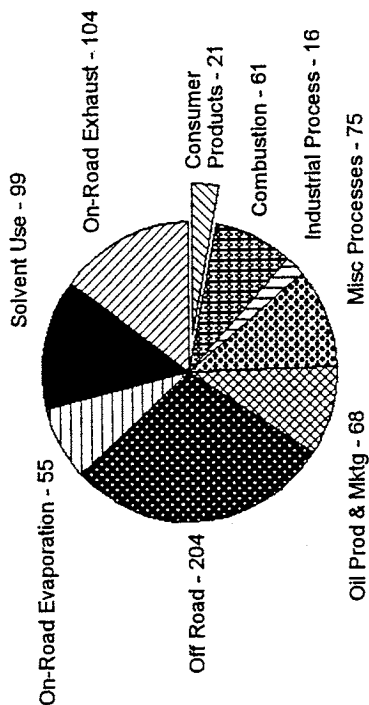
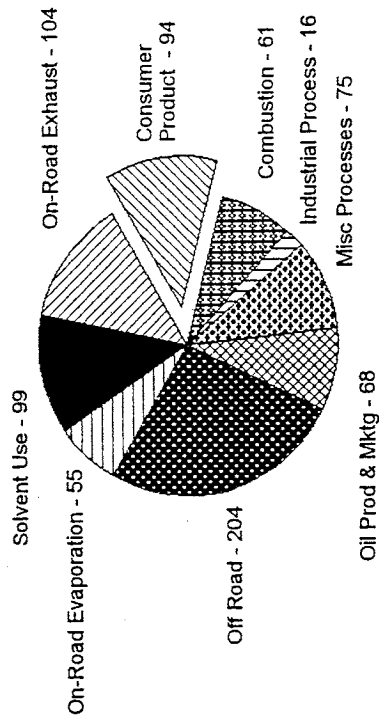


Figure 12c

**2010 South Coast Ozone Forming Potential Inventory
All SIP Controls Excluding Consumer Products**

(Total = 776 tons/day)



For Sacramento in 2005, consumer products continue to account for only a small portion of the OFP inventory under all three scenarios. Therefore, for this area, the impact of consumer products on air quality will remain minor even after future controls on other sources have been implemented and even if no controls beyond those already in place are applied to consumer products.

The situation is generally similar for the SCAB in 2010 except for the scenario in which all SIP controls other than those applicable to consumer products are assumed to be in place. For this scenario, consumer products account for a non-trivial component of the OFP inventory although they are by no means the source making the largest contribution. In addition, it should be pointed out that the UAM analyses performed for this scenario indicated that (1) elimination of additional consumer product controls would not preclude compliance with the federal ozone standard, and (2) the controls assumed to be in place for other source categories include those represented by the "black box" allowed by §182(e)(5) of the Clean Air Act for "advanced control technologies." Therefore, the results shown indicate that even with virtually every other known control in place, and even with some unknown controls, consumer product emissions at current levels still do not represent a major factor with respect to California's air quality.

REFERENCES

1. "The California State Implementation Plan for Ozone - Volume II: The Air Resources Board's Mobile Source and Consumer Products Elements," November 15, 1995.
2. Letter from SAI to the South Coast Air Quality Management District, March 15, 1996.
3. "Emission Inventory Procedural Manual - Volume III: Methods for Assessing Area Source Emissions," California Air Resources Board, September 1995.
4. "Study of Volatile Organic Compound Emissions from Consumer and Commercial Products," U.S. EPA, EPA-453/R-94-066-A, March 1995.
5. Comments on Raw VOC Content Data From EPA Consumer and Commercial Products Survey, Letter to Bruce Moore, U.S. Environmental Protection Agency from D. Douglas Fratz, Chemical Specialties Manufacturers Association, dated March 25, 1994.
6. Communication from Lynn T. Bartos, Dow Larkin Laboratory, identifying glycol ethers that have low vapor pressures to Doug Fratz, Chemical Specialties Manufacturers Association, May 6, 1996.
7. Personal communication with Doug Fratz, Chemical Specialties Manufacturers Association, September 1996.
8. List of Compounds reported as "Changes to be made to EPA Consumer Products Survey Data" by the Cosmetic, Toiletry, and Fragrance Association, June 10, 1994.
9. Wooley, Nagaroff, and Hodgson, "Release of Ethanol to the Atmosphere During Use of Consumer Cleaning Products," Journal of the Air and Waste Management Association, Vol 40, No. 8, August 1990.
10. "Emissions of Selected VOC Compounds from the Use of Laundry and Dishwashing Products," Study prepared for the Soap and Detergent Association by CH2M Hill, May 1994.
11. Personal communication with Dr. Joyce Graf, Cosmetic, Toiletry and Fragrance Association, March 26, 1997.

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

12. "Preliminary Draft Consumer Products Mid-Term Measures Data Summaries," California Air Resources Board, November 25, 1996.
13. "1990 Census of Population, General Population Characteristics, United States," U.S. Department of Commerce, Bureau of the Census, Report No. 1990 CP-1-1. November 1992.
14. "Emission Inventory 1993," California Air Resources Board, Technical Support Division, June 1995.
15. "Proposed Regulations to Reduce Volatile Organic Compound Emissions from Consumer Products - Staff Report," California Air Resources Board, August 1990.
16. "Proposed Amendments to the Statewide Regulation to Reduce Volatile Organic Compound Emissions from Consumer Products, Phase II - Staff Report," California Air Resources Board, October, 1991.
17. "Proposed Regulations for Low-Emission Vehicles and Clean Fuels - Staff Report," California Air Resources Board, August 13, 1990.
18. Personal Communication between Bart Croes, California Air Resources Board, and Douglas Fratz, Chemical Specialties Manufacturers Association, 1995.
19. "Consumer Products Mid-Term Measures Data Summaries - Preliminary Draft," California Air Resources Board, November 25, 1996.
20. "Identification of Volatile Organic Compound Species Profiles - ARB Speciation Manual, Second Edition, Volume 1," California Air Resources Board, August 1991.
21. California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.

Report No. SR98-03-01

Addendum to "Impact of Consumer Products on California's Air Quality"

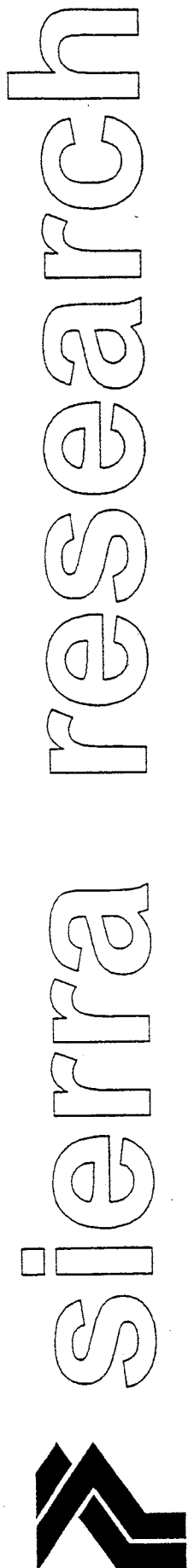
prepared for:

**Chemical Specialties Manufacturers
Association and the Cosmetic, Toiletry,
and Fragrance Association**

March 16, 1998

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**ADDENDUM TO
"IMPACT OF CONSUMER PRODUCTS
ON CALIFORNIA'S AIR QUALITY"**

prepared for:

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and
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March 16, 1998

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Addendum to
“Impacts of Consumer Products
on California’s Air Quality”

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ADDENDUM TO "IMPACT OF CONSUMER PRODUCTS ON CALIFORNIA'S AIR QUALITY"

In response to comments and questions received from the California Air Resources Board (CARB) regarding the Sierra Research and System Applications International (SAI) report "Impact of Consumer Products on California's Air Quality,"* this addendum to the report was prepared at the request of the Chemical Specialties Manufacturers Association (CSMA) and the Cosmetic, Toiletry, and Fragrance Association (CTFA). In addition to responding to specific issues raised by CARB, the addendum presents further detailed data related to the consumer products emission inventory presented in the report.

Issues Related to the Consumer Products Emission Inventory and Reactivity Calculations

Use of the U.S. EPA Consumer Products Database - As noted in the report, the consumer products emission inventory was developed from a database developed by the U.S. Environmental Protection Agency (U.S. EPA).** This database addresses consumer products emissions on a nationwide basis. When the study underlying the report began in mid-1996, it was determined that the U.S. EPA database formed the most complete and accurate source of information regarding consumer products available at that time. Although CARB has collected some California-specific data regarding consumer product emissions, these data were determined to be less complete than the EPA data at the time the study was initiated. CARB has subsequently collected additional California-specific data and has plans to perform additional activities related to data gathering. At such time that a complete California-specific database becomes available, it will be superior to the U.S. EPA database for use in developing an emissions inventory for consumer products in California.

Apparent Discrepancies in Table B-1 - A detailed breakdown of the consumer products inventory contained in the report is presented in Table B-1 of Appendix B. However, the total mass emission rate reported in Table B-1 of 288 tons per day is at odds with the

* "Impact of Consumer Products on California's Air Quality", Sierra Research Report No. SR97-07-01, July 1997.

** "Study of Volatile Organic Compound Emissions from Consumer and Commercial Products," U.S. EPA, EPA-453/R-94-066-A, March 1995.

197 ton per day value specified in the body of the report. This discrepancy is due to the inadvertent inclusion of the "Adhesives and Sealants" and "FIFRA-Regulated Products" categories in Table B-1. Products in these categories were not included by CARB in the consumer products emission inventory that formed the basis for the 1994 California State Implementation Plan for Ozone (SIP) and therefore were also excluded by Sierra. A corrected version of Table B-1, expanded to include additional detail regarding the adjustments made to the U.S. EPA database, is presented as Expanded Table B-1 in Attachment 1 to this addendum.

Expanded Table B-1 contains a spreadsheet printout showing the derivation of the consumer products inventory for California in 1990. For each product, the first numerical column shows the annual tonnage of reactive volatile organic compounds (RVOC) sold nationwide in 1990 according to the EPA inventory. The next column shows the adjusted value determined by the Sierra analysis of the speciated database.* (The details of this analysis are contained in Appendix E.) All further calculations are done with this inventory. The original EPA inventory is shown for comparison with the Sierra analysis.

The EPA inventory did not have complete market coverage. The RVOC tonnage is adjusted upward to account for the estimated market coverage. This is done by dividing by the estimated market coverage to obtain the results shown in "Adjusted RVOC Content" column. These results on *RVOC content in the product* are then multiplied by the percentage of the RVOC that is actually emitted into the atmosphere. This gives the actual RVOC *emitted* (for the entire U.S. in tons per year) in the next-to-last column. The U.S. data are then multiplied by 12% to get the California data shown in the final column. The numbers in this final column were totaled to obtain the annual inventory for California, in 1990, as 71,761 tons per year or 197 tons per day.

As noted in the report, Sierra's analysis of the consumer products inventory was, insofar as possible, intended to be consistent with the consumer products inventory incorporated by CARB staff in the SIP. However, there was virtually no information provided in the SIP regarding what actual emission inventory categories were considered to be consumer products. Therefore, in order to determine how the SIP consumer products inventory was compiled, Sierra contacted the staff of CARB's Technical Support Division (TSD) during the fall of 1996.

Based on our analysis of the information we obtained from TSD, which is discussed in detail below, the Sierra consumer products inventory did not include emissions from the Adhesives and Sealants and the FIFRA-Regulated Product categories shown in Table B-1 of our recent report. While we believe our analysis accurately reflects the product categories included in the SIP consumer products inventory, it would have clearly been beneficial to all involved if CARB staff had provided a detailed description of how that inventory was constructed. The two categories – Adhesives and Sealants, and FIFRA-

* The Sierra analysis was not applied to the Coatings and Related Products group. Instead, the original EPA data were used for aerosol spray paints (product codes 6101 to 6199). Recent CARB data were used for coating-related products (product codes 6201 to 6299).

Regulated Products – are included in the EPA inventory and were inadvertently left in Table B-1 although they should have been removed. The emission rate from these two categories is 91 tons per day, which accounts for the difference between the correct 197 ton per day value and the total value computed by CARB staff of 288 tons per day.

Subsequent to the publication of this study, further information was received from the Air Resources Board Technical Support Division staff regarding the make-up of the estimated 265 tons per day consumer products VOC emissions inventory upon which the current Consumer Products Element of the 1994 SIP is based. This further information is contained in a letter dated February 24, 1998, from Richard Bode, Manager of the Emission Inventory Methods Section, to Doug Fratz, of the Chemical Specialties Manufacturers Association. (A copy of that letter can be found in Attachment 3 to the Addendum.) According to Mr. Bode, estimates of VOC emissions from consumer product adhesives and sealants (4 tons per day) were included in the “consumer products non-aerosol” category, along with consumer product pesticide emissions for both propellants (4 tons per day) and solvents (10 tons per day). If this new information is correct, the consumer products 1990 emissions inventory used in the 1994 SIP may actually have included 18 tons per day in emissions from consumer product adhesives and sealants (4 tons per day) and pesticides (14 tons per day). If this new information is taken into account, the consumer product VOC emissions inventory as re-evaluated in this Sierra Research study would therefore be increased by 18 tons per day, to a total of 215 tons per day statewide. This remains significantly lower than the 265 tons per day VOC inventory used in the 1994 SIP for consumer products. Sierra’s rationale for excluding these categories in the absence of this new information is discussed below.

Classification Schemes - CARB uses three classification schemes for its inventory. The newest set of codes is referred to as the emission inventory code (EIC). An older code is called the category of emission source (CES) code. A yet older code, the old inventory code (OIC), is still used for consistency with older emission inventory summaries. Newer summaries are based on the first three digits of the EIC.

Sierra received a file called category.dat from the TSD inventory section that was used to determine the relationship among all these codes. Sierra also received an electronic copy (file eic.dat) of the various descriptions of the categories for the new EIC codes. Table 1 shows the codes for consumer solvents, all instances of adhesives and sealants, and residential pesticide use. The relationship among the various codes is taken from the category.dat file. The descriptions provided in this table are taken from the descriptions provided in the eic.dat file.

The first digit of the EIC and OIC codes is used for the major classifications. The EIC codes in Table 1 start with 2, 4, and 5; these correspond respectively to the major classifications of Cleaning and Surface Coating, Industrial Processes, and Solvent Evaporation, as shown in the final column of Table 1. The first three digits of the EIC code are linked to a particular summary category, as shown in the fourth column of Table 1. The second set of three digits in the EIC code is associated with a source category, shown in column five of that table. There are five source categories that comprise the consumer products inventory:

Table I Consumer Solvent and Related Emission Categories Used in CARB Inventory						
Emission Inventory Code (EIC)	CES Code	OIC Code	Summary Category	Source Category	Name of Material	Major Classification
299,292,8200,0000	None	None	Other (Cleaning And Surface Coatings)	Adhesives And Sealants	Adhesives And Sealants (Unspecified)	Cleaning And Surface Coatings
299,292,8202,0000	83030	340	Other (Cleaning And Surface Coatings)	Adhesives And Sealants	Organic Solvent Based Adhesives And Sealants (Unspecified)	Cleaning And Surface Coatings
299,292,8250,0000	83063	340	Other (Cleaning And Surface Coatings)	Adhesives And Sealants	Water Based Adhesives And Sealants (Unspecified)	Cleaning And Surface Coatings
410,995,8200,0000	None	510	Chemical	Other	Adhesives And Sealants (Unspecified)	Industrial Processes
499,995,8200,0000	None	None	Other (Industrial Processes)	Other	Adhesives And Sealants (Unspecified)	Industrial Processes
510,502,9000,0000	83592	370	Consumer Products	Aerosol Paint Propellants	Coatings (Unspecified)	Solvent Evaporation
510,504,9000,0000	83600	370	Consumer Products	Aerosol Paint Solvents	Coatings (Unspecified)	Solvent Evaporation
510,510,8000,0000	83196	370	Consumer Products	Aerosol Product Propellants	Solvents (Unspecified)	Solvent Evaporation
510,512,8000,0000	83204	370	Consumer Products	Aerosol Product Solvents	Solvents (Unspecified)	Solvent Evaporation
510,514,8000,0000	83089	370	Consumer Products	Non-Aerosol Solvents	Solvents (Unspecified)	Solvent Evaporation
530,534,5700,0000	83238	610	Pesticides/Fertilizers	Aerosol Residential Pesticides - Propellants	Pesticides (Unspecified)	Solvent Evaporation
530,536,5700,0000	83246	610	Pesticides/Fertilizers	Aerosol Residential Pesticides - Ingredients	Pesticides (Unspecified)	Solvent Evaporation
530,538,5700,0000	83253	610	Pesticides/Fertilizers	Non-Aerosol Residential Pesticides - Ingredients	Pesticides (Unspecified)	Solvent Evaporation

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

- Aerosol Paint Propellants;
- Aerosol Paint Solvents;
- Aerosol Product Propellants;
- Aerosol Product Solvents; and
- Non-Aerosol Solvents.

As shown below, the fact that only these five categories were used in the SIP inventory can be documented by comparing the emission inventory results for these five categories with the values reported for consumer products in the 1994 SIP.

It is important to note that neither the adhesives and sealants nor the residential pesticide inventory category is considered by CARB staff to be part of the larger consumer products summary category. There are also several other pesticide references not shown in Table 1. Four EIC codes are listed in Industrial Processes\Food and Agriculture\Other in which the material is Pesticides (unspecified). Thirteen EIC codes are listed under Solvent Evaporation within the summary category of Pesticides/Fertilizers (in addition to the three shown in Table 1). None of these additional references are related to consumer products.

Sierra Analysis - In the analysis of the CARB inventory files to compute overall reactivity, mobile and stationary area sources are identified by their EIC code. Point sources are identified by a source classification code (SCC) and a standard industrial classification (SIC) code. The summary category for a particular combination of SIC and SCC code is found from information in the category.dat file. Summaries were prepared for both the EIC and the OIC codes. In this task, all classifications were taken directly from data files prepared by CARB.

As noted above, emissions from sealants and adhesives and pesticides are not included in the final summaries of the Sierra consumer products inventory. The decision not to include these applications was based on the CARB classifications shown in Table 1. Again, both the OIC code and the EIC codes shown in that table placed these categories outside the classification of consumer products.

During the preparation of the Sierra inventory, Sierra reviewed CARB's calculation methods for consumer products.* The discussions of both nonaerosol and aerosol consumer products methods (Sections 6.1 and 6.2, respectively) note that residential pesticide use is classified in the CES codes listed in Table 1. Thus, the classification of residential pesticide emissions outside the consumer products category is consistent with the emission classification system used by CARB.

The discussion of nonaerosol consumer products includes a section on "household" adhesives. Based on the value used as an illustration in the methods discussion, statewide

* California Air Resources Board, "Emission Inventory Procedural Manual. Volume III. Methods for Assessing Area Source Emissions," Technical Support Division, September 1995, Sections 6.1 and 6.2.

total organic gas (TOG) emissions from nonaerosol consumer products for the 1987 calendar year were 38,892 tons per year. Of this total, 1,442 tons (3.7%) of the nonaerosol consumer products emissions were from adhesives and sealants. The discussion of aerosol consumer products does not list adhesives and sealants as a product category. The example calculation gives the 1987 statewide emissions of propellants and solvents as 47,353 tons per year. Thus, the total consumer products emissions for aerosol and nonaerosol consumer products in 1987 were 86,245 tons per year. The 1,442 tons due to adhesives and sealants were 1.7% of this total. In contrast, the contribution of adhesives and solvents in the EPA inventory that Sierra used as its point of departure would represent about 11% of the total consumer products inventory if it were included, or about seven times more than the contribution estimated by CARB. Given this, Sierra concluded that since the bulk of the emissions in the Adhesives and Sealants category are not considered by CARB staff to be consumer product emissions, this category should be excluded from Sierra's consumer products inventory.

CARB 1990 Baseline Consumer Product Emission Estimates for the South Coast and Sacramento - Although a series of individual consumer products categories is used in the methodology for computing consumer products emissions, the results reported in the CARB emission inventory data files do not subdivide any of the EIC code categories shown in Table 1. CARB provided Sierra with a set of data files for the South Coast Air Basin and the Sacramento Valley Air Basin emission inventory in 1990. The data for consumer products have been extracted from that file and are shown in Table 2. This table shows the relative contributions of each source category included in CARB's consumer products inventory for these two air basins in 1990.* Emissions are shown for both total organic gases (TOG), which are recorded in the data file, and reactive organic gases (ROG), which are computed from TOG emissions using a specified ROG fraction. These fractions were obtained from the category.dat file supplied by CARB. Only one consumer product source category has a ROG fraction that is not 1.0: nonaerosol solvents have a ROG fraction of 0.986. For the consumer products category, the ROG fraction is the same as the volatile organic compound (VOC) fraction. The TOG and ROG numbers for the South Coast Air Basin match those provided by CARB for a similar inventory run.**

The baseline inventory values of 108 and 18 tons per day for the South Coast and Sacramento Basins, respectively, compare favorably with the values of 115 and 15 tons per day reported for those areas in the 1994 SIP. This demonstrates that CARB did, in fact, base its SIP consumer products inventory on only the five source categories discussed previously (Aerosol Paint Propellants, Aerosol Paint Solvents, Aerosol Product Propellants, Aerosol Product Solvents, and Non-Aerosol Solvents) and supports Sierra's decision to exclude the categories of Adhesives and Sealants, and FIFRA-Regulated

* The data file entries have emissions for individual counties and portions of counties. These values have been summed to obtain the air basin totals shown in Table 2.

** Vijay Bhargava, California Air Resources Board, Technical Support Division, computer output from a 1990 emissions run for the South Coast Air Basin, October 22, 1996.

Table 2 1990 Consumer Products Inventory for South Coast and Sacramento Valley Air Basins						
Air Basin	Source Category	ROG/VOC Fraction	TOG (tons/yr)	Category Percent	ROG/VOC (tons/yr)	Category Percent
Sacramento Valley	Aerosol Paint Propellants	1.000	305.7	4.55%	305.7	4.58%
Sacramento Valley	Aerosol Paint Solvents	1.000	523.6	7.79%	523.6	7.84%
Sacramento Valley	Aerosol Product Propellants	1.000	738.7	10.99%	738.7	11.06%
Sacramento Valley	Aerosol Product Solvents	1.000	2192.4	32.62%	2192.4	32.82%
Sacramento Valley	Non-Aerosol Solvents	0.986	2960.4	44.05%	2919.0	43.70%
Sacramento Valley	Total:		6720.8	100.00%	6679.4	100.00%
South Coast	Aerosol Paint Propellants	1.000	1881.6	4.74%	1881.6	4.77%
South Coast	Aerosol Paint Solvents	1.000	3164.8	7.97%	3164.8	8.02%
South Coast	Aerosol Product Propellants	1.000	4545.5	11.45%	4545.5	11.52%
South Coast	Aerosol Product Solvents	1.000	13255.0	33.38%	13255.0	33.58%
South Coast	Non-Aerosol Solvents	0.986	16862.0	42.46%	16625.9	42.12%
South Coast	Total:		39708.9	100.00%	39472.8	100.00%
Ton per day results						
Air Basin	Source Category	ROG/VOC Fraction	TOG (tons/day)	Category Percent	ROG/VOC (tons/day)	Category Percent
Sacramento Valley	Aerosol Paint Solvents	1.000	0.84	4.55%	0.84	4.58%
Sacramento Valley	Aerosol Product Propellants	1.000	1.43	7.79%	1.43	7.84%
Sacramento Valley	Aerosol Product Solvents	1.000	2.02	10.99%	2.02	11.06%
Sacramento Valley	Non-Aerosol Solvents	1.000	6.01	32.62%	6.01	32.82%
Sacramento Valley	Aerosol Paint Solvents	0.986	8.11	44.05%	8.00	43.70%
Sacramento Valley	Total:		18.41	100.00%	18.30	100.00%
South Coast	Aerosol Paint Propellants	1.000	5.16	4.74%	5.16	4.77%
South Coast	Aerosol Paint Solvents	1.000	8.67	7.97%	8.67	8.02%
South Coast	Aerosol Product Propellants	1.000	12.45	11.45%	12.45	11.52%
South Coast	Aerosol Product Solvents	1.000	36.32	33.38%	36.32	33.58%
South Coast	Non-Aerosol Solvents	0.986	46.20	42.46%	45.55	42.12%
South Coast	Total:		108.80	100.00%	108.15	100.00%

Products. Given the lack of detail provided regarding the consumer products inventory in the SIP, we have been unable to determine the source of the differences between the inventory values Sierra received from CARB staff and those published in the 1994 SIP.

Detailed Speciated Consumer Products Emission Inventory - A complete listing of the detailed speciated emissions inventory discussed in the report is presented in Attachment 2, which contains the original speciated database and the results of the modifications to those data. All the analysis was done on the national database in units of tons per year. The California inventory was then obtained by multiplying the national

inventory by 12%. The three basic sets of adjustments made to the EPA data are described below.

The first adjustment was done to reduce the amount of "unknown" in the product list. This should provide a more accurate picture of the product composition. Many of the unknown compounds were thought to be fragrance compounds. To account for this, data were obtained from CSMA and CTFA on the percent of fragrance in each product. That percent was then multiplied by the sales figure from the EPA database to give a provisional fragrance amount. This value was then used to adjust the reported fragrance and unknown amounts as follows:

1. For those cases in which the provisional fragrance was less than the reported fragrance, no adjustment was made to the reported fragrance. If the provisional fragrance was greater than the reported fragrance, the adjustment was made by step 2 or step 3, below.
2. If the provisional fragrance amount was less than the sum of the reported fragrance and unknown compounds, the provisional fragrance was used in place of the reported fragrance. In this case, an intermediate amount of unknown was calculated by the following formula:

$$\left[\begin{array}{c} \text{Intermediate} \\ \text{Unknown Tons} \end{array} \right] = \left[\begin{array}{c} \text{Reported} \\ \text{Unknown Tons} \end{array} \right] - \left(\left[\begin{array}{c} \text{Provisional} \\ \text{Fragrance} \end{array} \right] - \left[\begin{array}{c} \text{Reported} \\ \text{Fragrance} \end{array} \right] \right)$$

3. If the provisional fragrance was greater than the sum of the reported fragrance and unknown compounds, that sum was used as the fragrance amount and the intermediate unknown value was set to zero.

For example, the original masses of fragrance and unknown for product 1107, Dyes - Permanent, are shown on the spreadsheet in Attachment 2 as 8.74 tons and 41.36 tons, respectively. For this product category, the percentage of fragrance and the annual sales (not shown on the spreadsheet printout) were 0.10% and 15,663 tons, respectively. This gives an incremental fragrance of 15.66 tons. Since this is less than the sum of the reported fragrance plus unknown tons, it is taken as the final fragrance. The intermediate value for the unknown species (not shown on the spreadsheet printout) is then computed as $41.36 - (15.66 - 8.74) = 34.44$ tons. This is called an intermediate value because it may be further adjusted as described below.

A second and third set of adjustments eliminated different groups of compounds. The second set eliminated all low reactivity (group 2) compounds. The third set of adjustments eliminated both low reactivity and low volatility (group 1) compounds. Both sets of adjustments use the same calculations. First, the masses of the compounds eliminated were set to zero. Second, the assumption was made that the composition of the unknown species, after adjustment for fragrance, was the same as the overall composition of the product. This required the following adjustment of the unknown mass.

$$\left[\begin{array}{c} \text{Final mass} \\ \text{of unknown} \end{array} \right] = \left[\begin{array}{c} \text{Intermediate mass} \\ \text{of unknown} \end{array} \right] \left(1 - \left[\begin{array}{c} \text{Mass fraction of} \\ \text{compounds eliminated} \end{array} \right] \right)$$

In this equation, the intermediate mass of the unknown is found from the fragrance adjustment and the mass fraction of the compounds eliminated is based on the original composition.

Continuing the example of product 1107, Dyes - Permanent, shows two group 2 compounds: glycerine, at 64.65 tons; and propylene glycol, at 17.64 tons. The total for all species is 1545.58 tons. Thus, the adjusted unknown tons are found as follows:

$$\text{Unknown} = 34.44 \left(1 - \frac{64.65 + 17.64}{1545.58} \right) = 32.60$$

This value is shown for the unknown species in the spreadsheet printout (Attachment 2). The total for this product is reduced from 1545.58 tons in the original data to 1461.46 tons with the revised species list. This difference of 84.12 tons is due to the following species reductions: glycerine (64.65 tons), propylene glycol (17.64 tons), and unknown ($34.44 - 32.60 = 1.83^*$).

In contrast, product category 1306 – Bath Oils, Beads and Capsules – has reported values of 54.06 tons of unknown and 8.77 tons of fragrance. The provisional fragrance (not shown on the printout) was found to be 507.85 tons. The sum of unknown plus fragrance is only 62.83 tons. Since this sum is less than the provisional fragrance, it is used as the final value for the fragrance and the unknown is set to zero. In this case, there is only one group 2 compound, mineral oil, at a reported value of 1.56 tons. The adjusted tons of mineral oil are set to zero. Because the unknown is already zero, there is no further reduction in total RVOC. The only difference between the original total and the adjusted total is due to the elimination of the group 2 compound, mineral oil.

In the case of Colognes (category 1301), the data on fragrance content and sales gave a value of 225.86 tons of fragrance. Because this was less than the reported value of 590.35 tons of fragrance, this reported value was not changed.

The analysis described above was repeated for each product with speciated data. The total of all species from the revised composition was used in place of the RVOC data

* The subtraction does not match due to rounding.

reported in the EPA inventory.* These data are shown in Expanded Table B-1 (Attachment 1) under the heading "RVOC Content Sierra (tons)."

The listing in Attachment 2 also shows the MIR value assigned to each compound included in each product category. It should be noted that for those products with "unknown" species, the reactivity of the unknown species was assumed to be equal to the weighted reactivity of the known species.

Another factor that needs to be taken into account is that speciation of aerosol paints was not performed as part of the study although the mass emissions from this category were included in the total consumer products inventory. This approach was taken because aerosol paints, although related to consumer products, are regulated differently by CARB.

Finally, some additional adjustments were made to the EPA inventory. This included the use of more recent information available in a CARB inventory and additional adjustments based on a review of the data with CSMA and CTFA. These adjustments are summarized in Table 3. The total inventory reduction by these adjustments was 54,741 tons per year, or 7.3% of the total of 746,897 tons per year for the U.S. in 1990 as calculated by the Sierra analysis.

Issues Related to Urban Airshed Modeling of the Impact of Consumer Products Emissions on Ozone Levels

As noted in the report, the Urban Airshed Modeling (UAM) was performed by Systems Applications International (SAI). The UAM analysis was performed in a manner that replicated, insofar as possible, the air quality modeling used in the SIP attainment demonstrations for the Sacramento and South Coast areas. It is important to note that no special hidden changes or assumptions were used in the UAM modeling included in the report. For both the South Coast and the Sacramento areas, the base runs were, in fact, exact reruns of the attainment modeling using the same model and the same input files (and, only where necessary, the same emissions preparation software programs and their inputs) but run on the SAI computer. The "adjusted" runs consisted only of increasing the rate of consumer product emissions up to presently controlled levels.

Since the modeling for the SIP attainment demonstration utilized a consumer products speciation profile with an MIR value of 0.88, that same profile was used by SAI. Because this profile includes non-reactive compounds such as ethane, acetone, etc., they were included in the UAM runs performed by SAI. The only changes to the UAM modeling performed for the SIP involved increasing the consumer products inventory to reflect the

* Speciated calculations were not made for the Coatings and Related Products category. Instead, the original EPA data were used for aerosol spray paints (product codes 6101 to 6199) and recent CARB data were used for coating-related products (product codes 6201 to 6299).

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EPA Product Category	Product Category Name	1990 EPA U.S. Survey ² tons/yr	1995 ARB CA Survey ³ lbs/day	ARB CA Survey tons/yr	ARB Survey ⁴ Adjusted to 1990 tons/yr	Corrected U.S. tons/yr	Reduction in Inventory tons/yr
2801	Lubricants (Household) ¹	3,352				0	3,352
3208	Lubricants (Automotive) ¹	17,569	12,240	2,234	2,072	17,268	301
3101	Automotive Waxes and Polishes	4,159	1,587	290	269	2,239	1,920
3106	Bug and Tar Remover	903	138	33	30	254	649
3209	Antifreeze ⁵	2,984	0	0	0	0	2,984
3212	Windshield Deicers ⁶	2,031				1,000	1,031
6201	Paint Thinner (non-auto)	15,623	6,517	1,189	1,103	9,194	6,429
6202	Paint Removers	5,926	1,182	216	200	1,668	4,258
6203	Brush Cleaners ⁷	332					
6204	Packaged Solvents	34,572	535	98	91	755	33,817
6299	Other Coating Related ⁷	3,078					

Notes:

¹All lubricant categories from the ARB survey are classified under automotive lubricants in this adjustment.

²Adjusted to remove all non-reactive and non-RVOC compounds.

³From inventory published by CARB, Consumer Products Mid-Term Measures Data Summaries, October 18, 1996.

⁴Adjusted to 1990 emissions by back-calculating emissions based on the 1990-1995 projected growth rate.

⁵Antifreeze was misreported because it is all inorganic compounds and ethylene glycol.

⁶Deicers are essentially all aerosols that are about 4 oz RVOC per unit. Therefore, CSMA believes that about one-half of this total was misreported as windshield washer fluid.

⁷Categories were adjusted to remove the exempt compound acetone (642.59 tons for 6299 and 38.17 tons for 6203).

absence of the mid- and long-term control programs. Therefore, adjustments were made to the gridded inventory that resulted in a proportional increase in consumer product emissions in the appropriate cells.

Specifically, the emissions of consumer products were implemented in both attainment model runs (i.e., Sacramento and South Coast) at levels below the current 30 percent control level. All that was done in this project was to merely increase the rate of the consumer product emissions back up to the 30 percent control level. This was done by going back to the pregridded files that specified emissions by source category, making only the appropriate overall rate adjustment to the consumer category, and recreating the UAM-ready files using the same techniques and other emissions data used to prepare the original attainment demonstration UAM input files. That is, all diurnal, gridded location, and speciation factors used were exactly the same as were used in the attainment model runs. Since none of these timing, location, and reactivity factors were changed, the report did not detail how these factors were implemented in either the original attainment modeling or the runs with increased consumer product emissions rates.

The fact that Sierra's revised analysis indicates a higher MIR value for consumer products has no bearing on the UAM modeling underlying the 1994 SIP. However, this result and the results regarding the consumer products inventories do suggest that the SIP air quality modeling analysis should be reevaluated. Any such reevaluation would also have to take into account recent changes to the mobile source emission inventory (e.g., the release of MVEI7G and the upcoming release of the OFFROAD model), as well as changes to the emission inventories for stationary and area sources that could result from the SB 2174 process. Finally, the species profiles for sources other than consumer products should also be updated to reflect the latest available data.

With respect to the UAM model boundary conditions for modeling in the South Coast, it has been suggested by CARB that simulations for the South Coast require scaling of boundary concentrations with emissions of ROG and that such scaling "would significantly increase the peak ozone." First, we note that unpublished analyses at SAI indicate that boundary air never quite reaches the grid cell where the peak ozone is simulated for at least some episodes used in the SIP. Second, while we agree that a common modeling practice at the South Coast Air Quality Management District has been to scale boundary concentrations with changes in overall ROG emissions, we do not agree that this practice is required. The District's "scaling" is usually done to account for the difference between clean-air background and values that were measured on the original date on which the meteorological episode is based. This scaling practice has changed from time to time, especially in the treatment of boundary ozone and NOx. It is our understanding that the Bay Area Air Quality Management District uses different boundary-level adjustments. However, most importantly, we note three key reasons for not adjusting the boundary conditions in this project: (1) while boundary conditions might be commonly adjusted for overall emissions strategies, boundary conditions are not commonly adjusted for individual category sensitivity tests because individual categories (e.g., consumer product emissions) have specific species profiles that generally differ in reactivity from the overall ROG average species profile so that appropriate species adjustments in the boundary profile cannot be properly adjusted; (2) boundary condition adjustments should always produce small or secondary impacts unless the modeling region is improperly constructed (for the South Coast, the relatively clean ocean air helps to ensure well-constructed modeling regions); (3) in light of these first two factors, Occam's razor dictates that the simple and straightforward approach to demonstrating the sensitivity to consumer product emissions control should be done by varying only the emissions inventory regarding this category, and that is precisely what was done.

Attachment 1

Expanded Table B-1
Derivation of 1990 Consumer Products Emission Inventory

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Expanded Table B-1

Derivation of 1990 Consumer Products Emission Inventory

	RVOC Content 1990 EPA (tons)	RVOC Content Sierra (tons)	Estimated Market Coverage (percent)	Adjusted RVOC Content (tons)	RVOC Content Emitted (pct)	RVOC Emitted in U.S. (tons)	RVOC Emitted in CA (tons)
Personal Care Products							
Hair Care Products							
1101 Bleaches and lighteners	101	110	95	115	10	12	1
1102 Brilliantines	0	0	95	0	100	0	0
1103 Conditioners	847	554	95	583	4	23	3
1104 Conditioning sprays	13	13	95	13	100	13	2
1105 Curl activators	1	1	95	1	100	1	0
1106 Curl revitalizers	170	170	95	179	100	179	21
1107 Dyes - Permanent	1,463	1,462	95	1,539	10	154	18
1108 Dyes - Semipermanent	34	34	95	36	10	4	0
1109 Dyes - Temporary	739	739	95	777	10	78	9
1110 Finishing hair sprays	152,152	152,128	94	161,839	100	161,839	19,421
1111 Finishing spritzes	6,115	6,114	95	6,436	100	6,436	772
1112 Grooming creams	4	2	95	2	100	2	0
1114 Mousses	2,300	2,325	95	2,448	100	2,448	294
1115 Permanent wave treatments	232	81	95	86	10	9	1
1116 Pomades	3	3	95	4	100	4	0
1118 Rinses	0	0	95	0	4	0	0
1119 Setting lotions	237	237	95	249	100	249	30
1120 Shampoos	1,596	1,842	95	1,938	4	78	9
1121 Spray shines	558	434	95	457	100	457	55
1122 Straighteners	0	0	95	0	10	0	0
1123 Styling gels	591	586	95	617	100	617	74
1124 Styling sprays	3,638	3,638	95	3,830	100	3,830	460
1125 Styling spritzes	7,096	7,093	95	7,467	100	7,467	896
1126 Thickeners	0	0	95	0	100	0	0
1127 Tonics	367	368	95	387	100	387	46
1199 Other hair care products	48	33	95	35	100	35	4
All Hair Care Products	178,305	177,967		189,037		184,318	22,118
Deodorants and Antiperspirants							
1201 Underarm deodorants	8,896	8,605	100	8,605	100	8,605	1,033
1202 Underarm antiperspirants	20,752	11,373	100	11,373	100	11,373	1,365
1203 Foot deodorant sprays	167	168	95	177	100	177	21
1204 Feminine hygiene deodorants	32	32	95	34	100	34	4
1299 Other deod/antiperspirants	81	82	95	86	100	86	10
All Deod/Antiperspirants	29,928	20,260		20,275		20,275	2,433
Fragrance Products							
1301 Colognes	8,461	8,497	95	8,945	100	8,945	1,073
1302 Perfumes	153	153	95	161	100	161	19
1303 Toilet waters	807	807	95	850	100	850	102
1304 After shave treatments	5,987	5,989	95	6,304	100	6,304	756
1305 Body fragrance sprays	1,562	1,553	95	1,635	100	1,635	196
1306 Bath oils, beads and capsules	153	153	95	161	4	6	1
1399 Other fragrance products	741	741	95	780	100	780	94
All Fragrance Products	17,864	17,894		18,835		18,681	2,242

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Expanded Table B-1

Derivation of 1990 Consumer Products Emission Inventory

	RVOC Content 1990 EPA (tons)	RVOC Content Sierra (tons)	Estimated Market Coverage (percent)	Adjusted RVOC Content (tons)	RVOC Content Emitted (pct)	RVOC Emitted in U.S. (tons)	RVOC Emitted in CA (tons)
Powders							
1401 Baby powders	10	0	95	0	100	0	0
1402 Body powders	17	10	95	11	100	11	1
1403 Foot powders	2,497	2,507	95	2,638	100	2,638	317
1499 Other powder products	847	847	95	892	100	892	107
All Powder Products	3,371	3,365		3,542		3,542	425
Nail Care Products							
1501 Polishes	1,467	1,447	95	1,523	100	1,523	183
1502 Base coats, undercoats	419	418	95	440	100	440	53
1503 Polish removers	5,973	1,768	95	1,861	100	1,861	223
1504 Nail extenders	0	0	95	0	100	0	0
1505 Cuticle softeners	0	1	95	1	10	0	0
1506 Manicure preparations	0	0	95	0	100	0	0
1599 Other nail care products	823	813	95	856	100	856	103
All Nail Care Products	8,682	4,447		4,681		4,680	562
Facial and Body Treatments							
1601 Astringents	5,449	4,683	95	4,930	100	4,930	592
1602 Creams, scrubs, cleaners	286	248	95	261	10	26	3
1603 Rouges and blushes	10	10	95	11	100	11	1
1604 Foundations & fixatives	122	36	95	38	100	38	5
1605 Lipsticks	3	3	95	3	100	3	0
1606 Moisturizers	90	48	95	50	100	50	6
1607 Skin lighteners	17	17	95	18	100	18	2
1608 Facial masques	8	10	95	10	100	10	1
1610 Mascara	122	167	95	176	100	176	21
1611 Eyeliner	11	11	95	12	100	12	1
1612 Eye shadow	6	0	95	0	100	0	0
1613 Eye makeup remover	0	1	95	1	100	1	0
1614 Eyebrow pencil	0	1	95	1	100	1	0
1615 Hand and body lotions	311	272	95	286	100	286	34
1616 Skin protectants	136	135	95	142	100	142	17
1617 Depilatories	6	6	95	6	10	1	0
1618 Self-tanning preparations	28	17	95	18	100	18	2
1619 Suntan oils and lotions	47	22	95	23	100	23	3
1620 Sunscreens	123	101	95	107	100	107	13
1699 Other facial/body treatments	235	53	95	55	100	55	7
All Facial/Body Treatments	7,010	5,841		6,149		5,908	709
Oral Care Products							
1701 Mouthwashes	23,932	23,933	77	31,081	1	311	37
1702 Breath fresheners	386	387	95	408	54	220	26
1703 Toothpastes, etc.	1,083	1,083	95	1,140	1	11	1
1704 Plaque removal solutions	2,111	2,111	95	2,223	1	22	3
1705 Fluoride rinses	562	557	95	586	1	6	1
1706 Dental care products	33	33	95	35	1	0	0
1779 Other oral care products	25	25	95	26	1	0	0
All Oral Care Products	28,132	28,129		35,499		571	69

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Expanded Table B-1

Derivation of 1990 Consumer Products Emission Inventory

	RVOC Content 1990 EPA (tons)	RVOC Content Sierra (tons)	Estimated Market Coverage (percent)	Adjusted RVOC Content (tons)	RVOC Content Emitted (pct)	RVOC Emitted in U.S. (tons)	RVOC Emitted in CA (tons)
Health Use Products (external only)							
1801 Over-the-counter drugs	3,989	3,591	95	3,780	100	3,780	454
1802 Prescription pharmaceuticals	412	351	95	369	100	369	44
1899 Other health use products	1,538	1,536	95	1,617	100	1,617	194
All Health Use Products	5,939	5,477		5,766		5,766	692
Miscellaneous Personal Care Products							
1901 Hand cleaners and soaps	13,115	12,753	75	17,004	4	680	82
1902 Rubbing alcohol	23,027	6,229	95	6,557	100	6,557	787
1903 Shaving creams, gels, etc.	1,842	1,835	97	1,892	96	1,816	218
1999 Other misc. personal care	3,862	3,808	95	4,008	100	4,008	481
All Misc Pers Care Prod	41,846	24,625		25,453		13,061	1,567
Household Products							
Hard Surface Cleaners							
2101 General purpose cleaners	25,425	25,193	90	27,992	4	1,120	134
2102 Glass cleaners	14,688	7,143	95	7,519	100	7,519	902
2103 Oven cleaners	1,734	2,090	95	2,200	100	2,200	264
2104 Tub, tile, and sink cleaners	2,576	2,571	95	2,706	50	1,353	162
2105 Mildew removers	15	15	100	15	100	15	2
2106 Toilet bowl cleaners	189	190	100	190	4	8	1
2107 Rust stain removers	1	1	100	1	100	1	0
2108 Metal cleaners	1,458	1,467	100	1,467	100	1,467	176
2109 Soap scouring pads	93	93	100	93	100	93	11
2199 Other hard surface cleaners	5,874	6,149	100	6,149	4	246	30
All Hard Surface Cleaners	52,053	44,912		48,332		14,022	1,683
Laundry Products							
2201 Detergents	41,027	31,510	81	38,901	0	171	21
2202 Soaps	1	2	73	2	0	0	0
2203 Presoaks	17	17	73	23	0	0	0
2204 Prewash spot removers	2,527	2,178	73	2,983	25	746	89
2205 Bleaches	714	714	58	1,231	0	5	1
2206 Whiteners/brighteners	16	16	73	21	0	0	0
2207 Bluening	0	0	73	0	0	0	0
2208 Fabric softeners	6,022	5,992	75	7,990	0	35	4
2209 Water conditioners	10	10	73	13	0	0	0
2210 Starches, sizings, etc.	4,404	4,405	73	6,034	100	6,034	724
2299 Other laundry products	1,284	1,285	73	1,760	0	8	1
All Laundry Products	56,022	46,127		58,959		6,999	840

Attachment B - CSRA Comments on ARB Agenda Item # 13-2-2

Expanded Table B-1

Derivation of 1990 Consumer Products Emission Inventory

	RVOC Content 1990 EPA (tons)	RVOC Content Sierra (tons)	Estimated Market Coverage (percent)	Adjusted RVOC Content (tons)	RVOC Content Emitted (pct)	RVOC Emitted in U.S. (tons)	RVOC Emitted in CA (tons)
Fabric and Carpet Care Products							
2301 Carpet cleaners	1,529	1,398	100	1,398	50	699	84
2302 Carpet deodorizers	222	223	100	223	100	223	27
2303 Upholstery cleaners	197	197	100	197	100	197	24
2304 Spot removers	984	669	100	669	100	669	80
2305 Fabric stain repellants	1,042	1,042	95	1,096	100	1,096	132
2306 Water repellants	3	3	50	7	100	7	1
2307 Fabric dyes	0	0	100	0	4	0	0
2308 Antistatic sprays	22	22	50	44	100	44	5
2309 Dry cleaning fluids	1,630	125	100	125	100	125	15
2399 Other fabric/carpet care	154	149	100	149	85	126	15
All Fabric/Carpet Care	5,783	3,827		3,907		3,185	382
Dishwashing Products							
2401 Dish detergents (manual)	22,708	22,544	78	28,903	4	1,156	139
2402 Dish detergents (machine)	3,370	3,202	79	4,053	2	81	10
2403 Rinse aids	88	80	73	109	0	0	0
2404 Film and spot removers	1	1	73	1	0	0	0
2499 Other dishwashing products	4	4	73	6	0	0	0
All Dishwashing Products	26,171	25,831		33,072		1,238	149
Waxes and Polishes							
2501 Furniture waxes and polishes	3,406	3,339	95	3,515	100	3,515	422
2502 Floor waxes and polishes	3,667	3,332	95	3,507	100	3,507	421
2503 Dusting aids	559	554	90	616	100	616	74
2599 Other waxes and polishes	501	691	90	768	88	676	81
All Waxes and Polishes	8,133	7,916		8,405		8,313	998
Air Fresheners							
2601 Room air fresheners	25,410	25,902	95	27,265	100	27,265	3,272
2602 Toilet deodorant blocks	6,648	6,648	75	8,864	50	4,432	532
2699 Other air fresheners	1,916	1,917	90	2,130	100	2,130	256
All Air Fresheners	33,974	34,467		38,259		33,827	4,059
Shoe and Leather Care Products							
2701 Leather treatments	101	102	100	102	100	102	12
2703 Shoe polishes	43	43	50	87	100	87	10
2799 Other leather care products	85	85	75	114	100	114	14
All Shoe & Leather Care	229	230		302		302	36
Miscellaneous Household Products							
2801 Lubricants	1,641	0	50	0	100	0	0
2802 Drain openers	386	380	100	380	0	2	0
2803 Charcoal lighters	35,653	35,654	90	39,615	10	3,962	475
2804 Wick lamp fuels	5,963	5,963	90	6,625	10	663	80
2805 Plant leaf cleaners and waxes	6	6	100	6	100	6	1
2806 Driveway cleaners	3	3	90	3	100	3	0
2899 Other misc. HH products	5,031	5,212	90	5,791	72	4,170	500
All Misc Household Prod	48,683	47,217		52,420		8,804	1,056

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Expanded Table B-1

Derivation of 1990 Consumer Products Emission Inventory

	RVOC Content 1990 EPA (tons)	RVOC Content Sierra (tons)	Estimated Market Coverage (percent)	Adjusted RVOC Content (tons)	RVOC Content Emitted (pct)	RVOC Emitted in U.S. (tons)	RVOC Emitted in CA (tons)
Automotive Aftermarket Products							
Detailing Products							
3101 Waxes, polishes, sealers	3,924	2,239	95	2,357	100	2,357	283
3102 Vinyl and leather cleaners	157	157	95	165	100	165	20
3103 Upholstery fabric cleaners	226	198	95	209	100	209	25
3104 Tire cleaners	383	347	90	385	100	385	46
3105 Wheel cleaners	142	135	90	150	100	150	18
3106 Bug and tar removers	858	254	95	267	100	267	32
3107 Chrome cleaners, polishes	103	103	95	108	100	108	13
3108 Rubber and vinyl protectants	1,101	1,078	95	1,135	100	1,135	136
3199 Other detailing products	1,622	1,604	90	1,782	82	1,461	175
All Auto Detailing Products	8,516	6,115		4,777		6,238	749
Maintenance and Repair Products							
3201 Engine degreasers	10,506	13,172	98	13,440	25	3,360	403
3202 Carburetor, choke cleaners	11,159	9,412	95	9,907	50	4,954	594
3203 Brake cleaners	3,772	886	95	932	100	932	112
3204 Brake anti-squeal compounds	18	14	95	15	100	15	2
3205 Tire sealants and inflators	3,260	3,261	100	3,261	100	3,261	391
3206 Belt dressings	54	46	100	46	100	46	6
3207 Engine starting fluids	4,099	4,099	90	4,554	50	2,277	273
3208 Lubricants (exc engine oil)	17,342	17,268	100	17,268	100	17,268	2,072
3209 Antifreezes	0	0	90	0	100	0	0
3210 Brake fluids	5,468	29	90	33	0	0	0
3211 Body repair (exc coatings)	472	308	90	342	100	342	41
3212 Windshield deicers	2,031	1,000	100	1,000	100	1,000	120
3213 Windshield washer fluids	48,313	45,477	60	75,795	100	75,795	9,095
3299 Other repair products	39,356	38,415	90	42,684	84	35,854	4,303
All Auto Maint/Rep Prod	145,850	133,386		169,277		145,104	17,412
Coating and Related Products (except Architectural and Industrial Maintenance Coatings)							
Aerosol Spray Paints							
6101 Nonflat enamels	40,414	40,414	100	40,414	100	40,414	4,850
6102 Flat enamels	8,514	8,514	100	8,514	100	8,514	1,022
6103 Nonflat lacquers	8,054	8,054	100	8,054	100	8,054	966
6104 Flat lacquers	1,651	1,651	100	1,651	100	1,651	198
6105 Metallic pigmented coatings	5,065	5,065	100	5,065	100	5,065	608
6106 Clear coatings	3,643	3,643	100	3,643	100	3,643	437
6107 Traffic marking coatings	3,323	3,323	100	3,323	100	3,323	399
6108 Exact match auto paints	1,487	1,487	100	1,487	100	1,487	178
6109 Vinyl/fabric coatings	214	214	100	214	100	214	26
6110 Glass coatings	14	14	100	14	100	14	2
6111 Automotive sanding primers	2,840	2,840	100	2,840	100	2,840	341
6112 Rust-inhibitive primers	3,706	3,706	100	3,706	100	3,706	445
6113 Spatter finishes	628	628	100	628	100	628	75
6114 Wood stains	222	222	100	222	100	222	27
6115 Engine enamels	2,967	2,967	100	2,967	100	2,967	356
6116 High temperature coatings	1,900	1,900	100	1,900	100	1,900	228
6199 Other aerosol spray paints	3,702	3,702	100	3,702	100	3,702	444
All Aerosol Spray Paints	88,344	88,344		88,344		88,344	10,601

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Expanded Table B-1

Derivation of 1990 Consumer Products Emission Inventory

	RVOC Content 1990 EPA (tons)	RVOC Content Sierra (tons)	Estimated Market Coverage (percent)	Adjusted RVOC Content (tons)	RVOC Content Emitted (pct)	RVOC Emitted in U.S. (tons)	RVOC Emitted in CA (tons)
Coating-Related Products							
6201 Paint thinners (non-auto)	14,061	9,194	90	10,216	100	10,216	1,226
6202 Paint removers	5,333	1,668	90	1,853	100	1,853	222
6203 Brush cleaners	370	332	90	369	100	369	44
6204 Packaged solvents	31,115	755	90	839	100	839	101
6299 Other related products	3,721	3,078	90	3,420	100	3,420	410
All Coating Related Prod	54,600	15,027		16,697		16,697	2,004
Miscellaneous Products (not otherwise covered)							
Arts and Crafts Supplies							
7101 Artists paints, thinners	577	577	90	642	100	642	77
7102 Fixative sprays	87	29	90	32	100	32	4
7103 Specialty cleaning products	643	645	90	717	100	717	86
7104 Ceramic finishing products	19	19	90	21	100	21	3
7199 Other arts and crafts supplies	526	405	90	451	100	451	54
All Arts & Crafts Supplies	1,852	1,676		1,862		1,862	223
Non-Pesticidal Veterinary and Pet Products							
7201 Animal drugs (external only)	256	102	100	102	100	102	12
7202 Animal grooming products	126	128	100	128	100	128	15
7203 Cat litters	262	263	60	438	100	438	53
7299 Other vet and pet products	37	32	100	32	100	32	4
All Pet/Vet Products	681	524		699		699	84
Pressurized Food Products							
7302 Pan sprays	2,584	2,585	95	2,721	100	2,721	327
7303 Whipped dessert toppings	107	0	90	0	100	0	0
7399 Other pressurized products	0	0	90	0	100	0	0
All Pressurized Food Prod	2,691	2,585		2,721		2,721	327
Office Supplies							
7401 Pens	16	0	25	0	100	0	0
7402 Ink	2	2	25	9	100	9	1
7403 Permanent markers	14	14	25	57	100	57	7
7404 Dry erasable markers	0	0	25	0	100	0	0
7405 Highlighters	2	0	25	0	100	0	0
7406 Correction fluids	0	0	25	0	100	0	0
7408 Inked ribbons	0	0	25	0	100	0	0
7499 Other office supplies	692	692	25	2,768	100	2,768	332
All Office Supplies	726	708		2,833		2,833	340
All Surveyed Categories	855,385	746,897		840,103		597,990	71,759

1990 Total (tons/day) in California

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Attachment 2

Consumer Products RVOC Emissions Inventory

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory
Specification of Product Categories
1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Tons	Value
Personal Care Products					
Hair Care Products					
1101	Bleaches and lighteners				
	Isopropanol	89.75		89.75	0.54
	Ethanolamine	8.16		8.16	3.60
	Ethanol	7.29		7.29	1.34
	Unknown	2.34		0.00	
	Fragrance	2.04		4.38	2.00
	Misc	0.00		0.00	
	Total	109.58		109.58	0.88
1102	Brilliantines				
	Misc	0.18		0.18	
	Total	0.18		0.18	1.46
1103	Conditioners				
	Unknown	689.81		310.35	
	Glycerin USP 99.5%	447.51	2	0.00	1.00
	Propylene Glycol	138.85	2	0.00	1.00
	Ethanol	110.25		110.25	1.34
	Triethanolamine 85%	32.99	2	0.00	5.36
	Cyclomethicone	12.34	1	0.00	-
	Stearalkonium Chloride	9.31	2	0.00	1.00
	Lactic Acid	1.98	2	0.00	1.00
	Fragrance	0.00		130.81	2.00
	Misc	2.51		2.51	
	Total	1445.55		553.93	1.70
1104	Conditioning sprays				
	Ethanol	9.34		9.34	1.34
	Unknown	3.28		1.88	
	Fragrance	0.00		1.40	2.00
	Misc	0.17		0.17	
	Total	12.79		12.79	1.43
1105	Curly activators				
	Misc	0.94			
	Total	0.94		0.94	1.46
1106	Curly revitalizers				
	Ethanol	169.63		169.63	1.34
	Misc	0.33		0.33	
	Total	169.96		169.96	1.34
1107	Dyes - Permanent				
	Isopropanol	1096.28		1096.28	0.54
	2-Butoxyethanol	170.61		170.61	0.97
	Ethanol	122.49		122.49	1.34
	Glycerine	64.65	2	0.00	1.00
	Unknown	41.36		24.33	
	Propylene Glycol	17.64	2	0.00	1.00
	Benzoyl Alcohol	15.85		15.85	1.30
	Fragrance	8.74		24.40	2.00
	Ethanolamine	7.54		7.54	3.60
	Misc	0.42		0.42	
	Total	1545.58		1461.92	0.71
1108	Dyes - Semipermanent				
	Ethanol	17.76		17.76	1.34
	Unknown	13.43		10.10	
	Isobutane	2.72		2.72	1.21
	Fragrance	0.00		3.33	2.00
	Misc	0.15		0.15	
	Total	34.06		34.06	1.42
1109	Dyes - Temporary				
	Isopropanol	708.51		708.51	0.54
	Fragrance	23.52		23.52	2.00
	Benzoyl Alcohol	3.13		3.13	1.30
	Ethanol	2.87		2.87	1.34

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Tons	Value
	Misc	0.59		0.59	
	Total	738.62		738.62	0.59
1110	Finishing hair sprays				
	Ethanol	120118.19		120118.19	1.34
	Isobutane	14549.39		14549.39	1.21
	Propane	5978.85		5978.85	0.48
	Butane	3658.72		3658.72	1.02
	Hydrocarbon Propellant	2202.09		2202.09	0.75
	Unknown	1757.60		1573.31	
	N-Butane	1561.84		1561.84	1.02
	Isobutane/Propane	1500.00		1500.00	0.85
	Dimethyl Ether	595.46		595.46	0.56
	Gantrez Resin	420.00	2	0.00	1.00
	Isopropanol	151.92		151.92	0.54
	Isobutane/Propane	48.26		48.26	0.85
	Ethyl Ester of PVM/MA Copolymer	15.07	2	0.00	1.00
	Cyclomethicone	13.11	1	0.00	-
	Fragrance	10.05		189.56	2.00
	PVP/VA Copolymer in 50% Alcohol (where ALC.IS VOC)	5.50	2	0.00	1.00
	Butylester of PVM/MA Copolymer 00025119-680	4.72	2	0.00	1.00
	Glycerine	2.39	2	0.00	1.00
	Gantrez ES-425	1.10	2	0.00	1.00
	Misc	0.60		0.60	
	Total	152594.86		152128.19	1.27
1111	Finishing spritzes				
	Ethanol	6076.10		6076.10	1.34
	Butyl Ester of PVM/MA Copolymer	227.03	2	0.00	1.00
	Unknown	36.21		27.76	
	Fragrance	2.74		10.16	2.00
	Misc	0.47		0.47	
	Total	6342.55		6114.49	1.34
1112	Grooming creams				
	Mineral Oil	31.61	2	0.00	1.40
	Unknown	4.17		0.32	
	Fragrance	0.00		1.41	2.00
	Misc	0.00		0.00	
	Total	35.78		1.73	2.00
1114	Mousses				
	Ethanol	872.07		872.07	1.34
	Isobutane/Propane	562.50		562.50	0.85
	Unknown	327.18		307.51	
	Butane/Propane	143.69		143.69	0.75
	Propane	118.62		118.62	0.48
	Isobutane	114.54		114.54	1.21
	Butane	69.55		69.55	1.02
	Hydrocarbon Propellant	66.71		66.71	0.75
	Diffuoroethane	25.34		25.34	0.07
	N-Butane	18.49		18.49	1.02
	Internal Propellant Mixture & Isobutane/Isopentane	4.46		4.46	1.30
	External Propellant A-45 - Propane	1.60		1.60	0.48
	Polyquaternium 11	1.46	2	0.00	1.00
	Fragrance	0.00		19.47	2.00
	Misc	0.84		0.84	
	Total	2327.05		2325.40	1.06
1115	Permanent wave treatments				
	Glyceryl Thioglycolate	791.74	2	0.00	1.00
	Thioglycolic Acid	365.88	2	0.00	1.00
	Unknown	232.31		25.26	
	Glycerine	186.54	2	0.00	1.00
	Ethanolamine Sulfate	40.31	2	0.00	3.60
	Ethanolamine Sulfite	34.24	2	0.00	3.60
	Ammonium Thioglycolate	16.96	2	0.00	1.00
	Monoethanolamine	2.89		2.89	3.60
	Fragrance	0.00		52.93	2.00

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Tons	Value
	Misc	0.14		0.14	
	Total	1671.01		81.23	2.08
1116	Pomades				
	Fragrance	3.32		3.32	2.00
	Misc	0.03		0.03	
	Total	3.35		3.35	2.00
1118	Rinses				
	Misc	0.10		0.10	
	Total	0.10		0.10	1.46
1119	Setting lotions				
	Ethanol	234.08		234.08	1.34
	Propylene Glycol	7.60	2	0.00	1.00
	Unknown	2.65		1.25	
	Fragrance	0.00		1.36	2.00
	Misc	0.05		0.05	
	Total	244.38		236.74	1.34
1120	Shampoos				
	Unknown	1639.58		179.13	
	Coal Tar Solution	134.39		134.39	6.00
	Isopropanol	54.63		54.63	0.54
	Sodium Lauryl Sulfate	11.75	2	0.00	1.00
	Fragrance	10.20		1,466.20	2.00
	Beer, Non Potable (Anheuser Busch)	7.96	2	0.00	1.00
	Cycloryl NWC	6.72	2	0.00	1.00
	Ammonium Laureth Sulfate	5.59	2	0.00	1.00
	Ethanol	5.57		5.57	1.34
	Menthol	3.89	2	0.00	2.00
	Tea-Laurel Sulfate	3.18	2	0.00	1.00
	Ammonium Laureth Sulfate	3.01	2	0.00	1.00
	Lauroamphoglycinate & Sodium Trideceth Sulfate	2.45	2	0.00	1.00
	Sodium Laureth-12 Sulfate	1.35	2	0.00	1.00
	Misc	1.63		1.63	
	Total	1891.90		1,841.55	2.27
1121	Spray shines				
	Hydrocarbon Propellant	216.01		216.01	0.75
	Isobutane	110.75		110.75	1.21
	Isoparaffin	91.11	2	0.00	1.50
	Ethanol	68.45		68.45	1.34
	Propane	26.39		26.39	0.48
	N-Butane	5.22		5.22	1.02
	Isobutane/Propane	5.12		5.12	0.85
	Unknown	2.02		0.91	
	Fragrance	0.00		0.92	2.00
	Misc	0.05		0.05	
	Total	525.12		433.82	0.95
1122	Straighteners				
	Misc	0.00		0.00	
	Total	0.00		0.00	1.46
1123	Styling gels				
	Ethanol	524.61		524.61	1.34
	Unknown	62.28		44.65	
	PVP/VA Copolymer	26.78	2	0.00	1.00
	GE SF 1204	20.46	2	0.00	1.00
	GE SF 1202	18.66	2	0.00	1.00
	Fragrance	3.54		16.19	2.00
	Misc	0.25		0.25	
	Total	656.58		585.70	1.36
1124	Styling sprays				
	Ethanol	3466.63		3466.63	1.34
	Isobutane	49.50		49.50	1.21
	Unknown	29.98		23.66	
	Dimethyl Ether	29.60		29.60	0.56
	Butane	23.05		23.05	1.02
	Propane	19.03		19.03	0.48

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported RVOC Tons	Product RVOC Code	Adjusted	
				RVOC Inventory Tons	MIR Value
	Isopropanol	13.55		13.55	0.54
	Fragrance	3.04		9.36	2.00
	Hydrocarbon Propellant	2.03		2.03	0.75
	Misc	2.04		2.04	
	Total	3638.45		3638.45	1.32
1125	Styling spritzes				
	Ethanol	6974.55		6974.55	1.34
	Gantrez ES-425 (50% Alcohol)	188.69	2	0.00	1.34
	Unknown	85.41		73.12	
	Butyl Ester of PVM/MA Copolymer	42.33	2	0.00	1.00
	PVP/VA Copolymer	38.26	2	0.00	1.00
	Butane	22.76		22.76	1.02
	Propane	10.23		10.23	0.48
	Ethyl Ester of PVM/MA Copolymer	4.92	2	0.00	1.00
	Dimethyl Ether	2.16		2.16	0.56
	Isobutane	1.08		1.08	1.21
	Fragrance	0.00		9.47	2.00
	Misc	0.00		0.00	
	Total	7370.39		7093.36	1.34
1126	Thickeners				
	Misc	0.05		0.05	
	Total	0.05		0.05	1.46
1127	Tonics				
	Ethanol	364.83		364.83	1.34
	Fragrance	1.57		3.03	2.00
	Unknown	1.15		0.00	
	Misc	0.00		0.00	
	Total	367.55		367.86	1.35
1199	Other hair care products				
	Ethanol	21.21		21.21	1.34
	Cyclomethicone	15.40	1	0.00	-
	Mineral Spirits	8.19		8.19	1.30
	Unknown	3.56		0.57	
	Fragrance	0.00		2.72	2.00
	Misc	0.11		0.11	
	Total	48.47		32.80	1.39
	All Hair Care Products	181,775		177,967	
Deodorants and Antiperspirants					
1201	Underarm deodorants				
	Ethanol	5649.73		5649.73	1.34
	Propylene Glycol	1655.95	2	0.00	1.00
	Butane	1464.18		1464.18	1.02
	Propane	1233.37		1233.37	0.48
	Unknown	246.54		2.82	
	Isobutane	239.68		0.00	1.21
	Cyclomethicone	39.14	1	0.00	-
	Cyclomethicone	12.55	1	0.00	-
	Isobutane/Propane	7.32		7.32	0.85
	Hydrocarbon Propellant	3.04		3.04	0.75
	Fragrance	0.00		243.64	2.00
	Misc	1.07		1.07	
	Total	10552.57		8605.17	1.18
1202	Underarm antiperspirants				
	Isobutane	10331.05		10331.05	1.21
	Cyclomethicone	9256.04	1	0.00	-
	Propane	558.28		558.28	0.48
	Unknown	480.20		138.59	
	Diisopropyl Adipate	273.00	2	0.00	1.00
	Butane	85.69		85.69	1.02
	Ethanol	32.54		32.54	1.34
	Dimethicone Copolyol	8.63	1	0.00	-
	Isopropyl Myristate	1.22	2	0.00	1.00

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory
Speciation of Product Categories
1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Tons	Value
	Fragrance	0.00		226.53	2.00
	Misc	0.41		0.41	
	Total	21027.06		11373.09	1.19
1203	Foot deodorant sprays				
	Isobutane	93.11		93.11	1.21
	Ethanol	67.23		67.23	1.34
	Isopropanol	2.95		2.95	0.54
	Propane	2.25		2.25	0.48
	Unknown	2.14		0.29	
	Fragrance	0.00		1.85	2.00
	Misc	0.06		0.06	
	Total	167.74		167.74	1.25
1204	Feminine hygiene deodorants				
	Propane	29.57		29.57	0.48
	Isobutane	2.27		2.27	1.21
	Misc	0.46		0.46	
	Total	32.30		32.30	0.53
1299	Other deod/antiperspirants				
	Isobutane	65.20		65.20	1.21
	Ethanol	13.66		13.66	1.34
	Unknown	3.04		0.86	
	Fragrance	0.00		2.18	2.00
	Misc	0.00		0.00	
	Total	81.90		81.90	1.25
	All Deod/Antiperspirants	31,862		20,260	
Fragrance Products					
1301	Colognes				
	Ethanol	7746.89		7746.89	1.34
	Fragrance	590.35		590.35	2.00
	Unknown	44.56		44.55	
	Oil	36.61		36.61	1.40
	Denatured Alcohol	27.61		27.61	1.34
	Isobutane	21.48		21.48	1.21
	1-N-Butane	13.44		13.44	1.02
	Butane	10.33		10.33	1.02
	Propane	3.84		3.84	0.48
	Propylene Glycol	1.70	2	0.00	1.00
	Misc	2.18		2.18	
	Total	8498.99		8497.28	1.38
1302	Perfumes				
	Ethanol	118.19		118.19	1.34
	Fragrance	32.36		32.36	2.00
	Misc	2.48		2.48	
	Total	153.03		153.03	1.48
1303	Toilet waters				
	Ethanol	687.84		687.84	1.34
	Unknown	113.71		66.26	
	Fragrance	4.99		52.44	2.00
	Misc	0.67		0.67	
	Total	807.21		807.21	1.39
1304	After shave treatments				
	Ethanol	5743.83		5743.83	1.34
	Unknown	148.03		0.00	
	Denatured Alcohol	68.41		68.41	1.34
	Fragrance	26.48		174.51	2.00
	Misc	2.17		2.17	
	Total	5988.92		5988.92	1.36
1305	Body fragrance sprays				
	Ethanol	911.23		911.23	1.34
	Propane	330.12		330.12	0.48
	Isobutane	271.78		271.78	1.21
	Fragrance	19.20		37.87	2.00
	Unknown	18.67		0.00	

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Inventory
Specification of Product Categories
1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
				Tons	
	Cyclomethicone	5.54	1	0.00	-
	DC 244 Fluid	3.13	1	0.00	-
	Misc	2.32		2.32	
	Total	1561.99		1553.32	1.15
1306	Bath oils, beads and capsules				
	Light Petroleum Distillate	89.25		89.25	1.50
	Unknown	54.06		52.22	
	Fragrance	8.77		8.77	2.00
	Glycerine	5.43	2	0.00	1.00
	Misc	2.37		2.37	
	Total	159.88		152.61	1.54
1399	Other fragrance products				
	Ethanol	721.77		721.77	1.34
	Unknown	8.12		0.00	
	Fragrance	6.30		14.42	2.00
	Isobutane	4.57		4.57	1.21
	Mineral Oil	1.56	2	0.00	1.40
	Misc	0.48		0.48	
	Total	742.80		741.24	1.35
	All Fragrance Products	17,913		17,894	
	Powders				
1401	Baby powders				
	Talc	946.39	2	0.00	1.00
	Unknown	9.56		0.10	
	Misc	0.00		0.00	
	Total	955.95		0.10	1.46
1402	Body powders				
	Talc	162.52	2	0.00	1.00
	Fragrance	9.80		9.80	2.00
	Unknown	6.79		0.63	
	Misc	0.00		0.00	
	Total	179.11		10.43	2.00
1403	Foot powders				
	Isobutane/Propane	1406.25		1406.25	0.85
	Isobutane	763.25		763.25	1.21
	Ethanol	298.74		298.74	1.34
	Unknown	37.50		33.01	
	Undecylenic Acid	3.54	2	0.00	1.00
	Fragrance	0.00		4.45	2.00
	Misc	0.88		0.88	
	Total	2510.16		2506.57	1.02
1499	Other powder products				
	Isobutane	838.50		838.50	1.21
	Unknown	7.50		4.95	
	Undecylenic Acid	4.14	2	0.00	1.00
	Fragrance	1.46		3.98	2.00
	Triethanolamine	1.04	2	0.00	6.30
	Misc	0.00		0.00	
	Total	852.64		847.43	1.21
	All Powder Products	4,498		3,365	
	Nail Care Products				
1501	Polishes				
	Butyl Acetate	532.53		532.53	0.67
	Ethyl Acetate	436.32		436.32	0.21
	Toluene	318.24		318.24	2.70
	Isopropanol	128.17		128.17	0.54
	Dibutyl Phthalate	28.93	2	0.00	1.00
	Unknown	27.50		23.87	
	Acetone	19.65	1	0.00	0.56
	Camphor	3.87		3.87	1.50
	Nitrocellulose	1.60	2	0.00	1.00

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Tons	Value
	Isoparaffin	1.57	2	0.00	1.50
	Fragrance	0.00		2.78	2.00
	Misc	1.19		1.19	
	Total	1499.57		1446.96	0.98
1502	Base coats, undercoats				
	Ethyl Acetate	156.71		156.71	0.21
	Butyl Acetate	152.68		152.68	0.67
	Toluene	70.05		70.05	2.70
	Isopropanol	19.66		19.66	0.54
	Unknown	8.26		8.23	
	Heptane	7.47		7.47	0.81
	N-Butyl Alcohol	1.95		1.95	2.69
	Nitrocellulose	1.77	2	0.00	1.00
	Misc	1.01		1.01	
	Total	419.56		417.76	0.85
1503	Polish removers				
	Acetone	4169.41	1	0.00	0.56
	Ethyl Acetate	1320.62		1320.62	0.21
	Isopropanol	259.76		259.76	0.54
	Ethanol	113.64		113.64	1.34
	Ethyl Acetate	57.27		57.27	0.21
	Unknown	51.24		15.48	
	Methyl Ethyl Ketone	1.47		1.47	0.75
	Misc	0.11		0.11	
	Total	5973.52		1768.35	0.33
1504	Nail extenders				
	Misc	0.00		0.00	
	Total	0.00		0.00	1.46
1505	Cuticle softeners				
	Misc	0.90		0.90	
	Total	0.90		0.90	1.46
1506	Manicure preparations				
	Misc	0.11		0.11	
	Total	0.11		0.11	1.46
1599	Other nail care products				
	Unknown	397.43		393.74	
	N-Butane	228.04		228.04	1.02
	Propane	111.51		111.51	0.48
	Isobutane	25.99		25.99	1.21
	Butyl Acetate	20.68		20.68	0.67
	Ethyl Acetate	13.86		13.86	0.21
	Toluene	13.46		13.46	2.70
	Cyclomethicone	4.14	1	0.00	-
	Acetone	3.52	1	0.00	0.56
	Isopropanol	2.61		2.61	0.54
	Misc	3.06		3.06	
	Total	824.30		812.95	0.89
	All Nail Care Products	8,718		4,447	
Facial and Body Treatments					
1601	Astringents				
	Ethanol	4588.36		4588.36	1.34
	Witch Hazel	748.25	2	0.00	0.50
	Unknown	94.04		67.61	
	Acetone	6.54	1	0.00	0.56
	Isopropanol	4.48		4.48	0.54
	Witch Hazel (w/Ethanol)	4.31		4.31	1.34
	Petroleum Distillate	2.47		2.47	1.30
	Fragrance	0.00		15.56	2.00
	Misc	0.35		0.35	
	Total	5448.80		4683.14	1.34
1602	Creams, scrubs, cleaners				
	Unknown	171.79		108.79	

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory
Speciation of Product Categories
1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
				Tons	
	Ethanol	109.14		109.14	1.34
	Mineral Oil	59.24	2	0.00	1.40
	Propylene Glycol	10.04	2	0.00	1.00
	Sorbitol	7.47	2	0.00	1.00
	Hexylene Glycol	7.38	2	0.00	1.54
	A-C Polyethylene 617A	6.97	2	0.00	1.00
	Butylene Glycol	5.48	2	0.00	1.00
	Triton	2.41	2	0.00	1.00
	Glycerine	1.18	2	0.00	1.00
	Mineral Spirits	1.01		1.01	1.30
	Fragrance	0.00		24.92	2.00
	Misc	4.23		4.23	
	Total	386.34		248.09	1.46
1603	Rouges and blushes				
	Unknown	10.06		8.86	
	Fragrance	0.00		1.20	2.00
	Misc	0.18		0.18	
	Total	10.24		10.24	2.00
1604	Foundations & fixatives				
	Cyclomethicone	62.88	1	0.00	-
	Unknown	42.39		14.98	
	Propylene Glycol	24.92	2	0.00	1.00
	Ethanol	11.53		11.53	1.34
	Petroleum Distillate	4.15		4.15	1.30
	Butylene Glycol	2.78	2	0.00	1.00
	Mineral Oil	1.11	2	0.00	1.40
	Fragrance	0.00		4.18	2.00
	Misc	1.08		1.08	
	Total	150.84		35.92	1.47
1605	Lipsticks				
	Unknown	2.78		2.78	
	Misc	0.22		0.22	
	Total	3.00		3.00	1.46
1606	Moisturizers				
	Mineral Oil	36.72	2	0.00	1.40
	Unknown	33.60		6.40	
	Cyclomethicone	29.02	1	0.00	-
	Ethanol	25.21		25.21	1.34
	Glycerine	19.31	2	0.00	1.00
	Butylene Glycol	12.91	2	0.00	1.00
	Propylene Glycol	12.78	2	0.00	1.00
	Disodium Laureth Sulfosuccinate	8.16	2	0.00	1.00
	Cyclomethicone Tetramer	1.98	1	0.00	-
	Fragrance	0.00		14.40	2.00
	Misc	1.59		1.59	
	Total	181.28		47.60	1.58
1607	Skin lighteners				
	Ethanol	12.67		12.67	1.34
	Unknown	4.23		4.23	
	Misc	0.31		0.31	
	Total	17.21		17.21	1.34
1608	Facial masques				
	Ethanol	7.96		7.96	1.34
	Propylene Glycol	2.55	2	0.00	1.00
	Butylene Glycol	1.08	2	0.00	1.00
	Fragrance	0.00		1.56	2.00
	Misc	0.42		0.42	
	Total	12.01		9.94	1.45
1610	Mascara				
	Petroleum Distillate	139.98		139.98	1.30
	Ethanol	18.34		18.34	1.34
	C9-11 Isoparaffin	5.59	2	0.00	1.20
	Mineral Spirits	3.90		3.90	1.30
	Unknown	2.38		1.38	

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory
Specification of Product Categories
1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
		Tons		Tons	
	Fragrance	0.00		0.96	2.00
	Misc	2.62		2.62	
	Total	172.81		167.17	1.31
1611	Eyeliners				
	Petroleum Distillate	10.99		10.99	1.30
	Propylene Glycol	2.25	2	0.00	1.00
	Misc	0.39		0.39	
	Total	13.63		11.38	1.30
1612	Eye shadow				
	Cyclomethicone	6.26	1	0.00	-
	Misc	0.12		0.12	
	Total	6.38		0.12	1.46
1613	Eye makeup remover				
	Isohexadecane	7.14	2	0.00	0.65
	Misc	1.28		1.28	
	Total	8.42		1.28	1.46
1614	Eyebrow pencil				
	Misc	0.51		0.51	
	Total	0.51		0.51	1.46
1615	Hand and body lotions				
	Unknown	285.10		188.72	
	Glycerine	33.85	2	0.00	1.00
	Ethanol	20.08		20.08	1.34
	Mineral Oil	18.50	2	0.00	1.40
	Decamethylcycllopentasiloxane	3.62	1	0.00	-
	Isobutane	3.25		3.25	1.21
	Propylene Glycol	3.13	2	0.00	1.00
	Butylene Glycol	1.92	2	0.00	1.00
	Cyclomethicone	1.30	1	0.00	-
	Fragrance	1.23		59.20	2.00
	Tea-Laurel Sulfate	1.20	2	0.00	1.00
	Misc	0.64		0.64	
	Total	373.82		271.89	1.81
1616	Skin protectants				
	Isopropanol	72.41		72.41	0.54
	Ethanol	33.24		33.24	1.34
	Propylene Glycol	22.09	2	0.00	1.00
	Petroleum Distillate	18.45		18.45	1.30
	Unknown	10.07		0.00	
	Cyclomethicone	1.79	1	0.00	-
	Fragrance	0.00		10.07	2.00
	Misc	0.66		0.66	
	Total	158.71		134.83	0.95
1617	Depilatories				
	Unknown	3.62		3.62	
	Fragrance	1.82		1.82	2.00
	Misc	0.61		0.61	
	Total	6.05		6.05	2.00
1618	Self-tanning preparations				
	Ethanol	15.20		15.20	1.34
	Dihydroxy Acetone	8.19	1	0.00	0.56
	Propylene Glycol	7.85	2	0.00	1.00
	Cyclomethicone	2.66	1	0.00	-
	Misc	1.88		1.88	
	Total	35.78		17.08	1.34
1619	Suntan oils and lotions				
	Cyclomethicone	22.50	1	0.00	-
	Ethanol	20.85		20.85	1.34
	Misc	1.19		1.19	
	Total	44.54		22.04	1.34
1620	Sunscreens				
	Ethanol	96.26		96.26	1.34
	Cyclomethicone	22.78	1	0.00	-
	Unknown	4.48		0.00	

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Inventory
Speciation of Product Categories
1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
				Tons	
	Fragrance	0.00		4.48	2.00
	Misc	0.49		0.49	
	Total	124.01		101.23	1.37
1699	Other facial/body treatments				
	Mineral Oil	831.09	2	0.00	1.40
	Cyclomethicone	170.73	1	0.00	-
	Ethanol	40.27		40.27	1.34
	Unknown	13.08		0.78	
	Hexylene Glycol	10.80	2	0.00	1.54
	Propylene Glycol	10.35	2	0.00	1.00
	Butylene Glycol	6.51	2	0.00	1.00
	Isobutane	5.70		5.70	1.21
	Fragrance	3.66		3.66	2.00
	Isopropanol	1.24		1.24	0.54
	Misc	0.89		0.89	
	Total	1094.32		52.54	1.35
	All Facial/Body Treatments	8,249		5,841	
Oral Care Products					
1701	Mouthwashes				
	Ethanol	23884.50		23884.50	1.34
	Sorbitol	56.28	2	0.00	1.00
	Unknown	45.98		0.00	
	Glycerine	3.53	2	0.00	1.00
	Flavor	2.00		47.98	2.00
	Misc	0.04		0.04	
	Total	23992.33		23932.52	1.34
1702	Breath fresheners				
	Isobutane	207.69		207.69	1.21
	Ethanol	162.89		162.89	1.34
	Unknown	15.45		0.00	
	Flavor	0.00		15.45	2.00
	Misc	1.16		1.16	
	Total	387.19		387.19	1.30
1703	Toothpastes, etc.				
	Unknown	1081.88		1081.88	
	Glycerine	51.13	2	0.00	1.00
	Flavor	0.00		0.00	2.00
	Misc	1.40		1.40	
	Total	1134.41		1083.28	1.46
1704	Plaque removal solutions				
	Ethanol	2105.32		2105.32	1.34
	Unknown	6.11		6.11	
	Flavor	0.00		0.00	2.00
	Misc	0.00		0.00	
	Total	2111.43		2111.43	1.34
1705	Fluoride rinses				
	Ethanol	519.29		519.29	1.34
	Unknown	36.77		36.77	
	Methol	6.20	2	0.00	2.00
	Misc	0.54		0.54	
	Total	562.80		556.60	1.34
1706	Dental care products				
	Unknown	31.17		31.17	
	Hydrocarbon Propellant	2.18		2.18	0.75
	Flavor	0.00		0.00	2.00
	Misc	0.00		0.00	
	Total	33.35		33.35	0.75
1779	Other oral care products				
	Ethanol	23.52		23.52	1.34
	Glycerine	2.31	2	0.00	1.00
	Unknown	1.21		1.21	
	Flavor	0.00		0.00	2.00

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory
Speciation of Product Categories
1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Tons	Value
	Misc	0.10		0.10	
	Total	27.14		24.83	1.34
	All Oral Care Products	28,249		28,129	
Health Use Products (external only)					
1801	Over-the-counter drugs				
	Ethanol	1577.92		1577.92	1.34
	Isobutane	756.88		756.88	1.21
	Isopropanol	407.13		407.13	0.54
	Lanette Wax	330.00	2	0.00	1.00
	Acetone	227.28	1	0.00	0.56
	Unknown	195.73		149.52	
	Propane	178.92		178.92	0.48
	Hydrocarbon Propellant	166.48		166.48	0.75
	Methyl Salicylate	120.20		120.20	1.00
	Methol	118.89	2	0.00	2.00
	Ammonium Nonoxymol-4-Sulfate	85.72	2	0.00	1.00
	Propylene Glycol	68.94	2	0.00	1.00
	Camphor	68.76		68.76	1.50
	Butane/Isobutane	66.00		66.00	1.12
	Triethanolamine	60.59	2	0.00	6.30
	Undecylenic Acid	43.85	2	0.00	1.00
	Glycerine	42.89	2	0.00	1.00
	Cetyl Alcohol	37.51	2	0.00	1.00
	Stearic Acid	31.62	2	0.00	1.00
	Eucalyptus	29.04		29.04	2.00
	Ethyl Ether	24.29		24.29	2.66
	Coal Tar Solution	24.00		24.00	6.00
	Polyoxyethylene Laurate	14.70	2	0.00	1.00
	Mineral Oil	14.32	2	0.00	1.40
	Petroleum Distillate	14.00		14.00	1.30
	Pyrenone CSE 10-1 Concentrate	10.41	2	0.00	1.00
	Glycerol Monostearate	9.75	2	0.00	1.00
	Glyceryl Stearate	7.30	2	0.00	1.00
	Phenol/Eucalyptus Oil Mixture	6.91	2	0.00	2.00
	Triton	3.98	2	0.00	1.00
	Undecylenic Acid	2.88	2	0.00	1.00
	Ammonium Lactate	2.83	2	0.00	1.00
	Ammonium Laureth Sulfate	2.05	2	0.00	1.00
	Isobutane/Propane	1.96		1.96	0.85
	Liquefied Petroleum Gas	1.86		1.86	0.75
	Polyethylene Glycol	1.78	2	0.00	1.00
	Fragrance	1.04		1.04	2.00
	Misc	2.92		2.92	
	Total	4761.33		3590.92	1.18
1802	Prescription pharmaceuticals				
	Ethanol	205.01		205.01	1.34
	Isopropanol	85.26		85.26	0.54
	Polydimethylsiloxane	46.76	1	0.00	1.00
	Isobutane	45.14		45.14	1.21
	Mineral Oil	36.47	2	0.00	1.40
	Triton	15.71	2	0.00	1.00
	Acetone	13.71	1	0.00	0.56
	Propylene Glycol	9.70	2	0.00	1.00
	Propane	6.47		6.47	0.48
	Nitroglycerin	6.21	2	0.00	1.00
	Unknown	6.16		4.42	
	Sorbitol Solution	5.28	2	0.00	1.00
	Ammonium Lactate	4.13	2	0.00	1.00
	Ethanol (Denatured) SD 23 A	3.34		3.34	1.34
	Diisopropyl Adipate	1.24	2	0.00	1.00
	Misc	1.09		1.09	
	Total	491.68		350.73	1.11

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	Inventory	MIR
		Tons	Code	Tons	Value
1899	Other health use products				
	Isopropanol	825.94		825.94	0.54
	Acetic Acid Glacial	336.10		336.10	0.25
	Ethanol	275.61		275.61	1.34
	Halothane	45.00	2	0.00	0.03
	Butane/Propane	40.99		40.99	0.75
	Isobutane	24.65		24.65	1.21
	Amino Methyl Propanediol	13.46	2	0.00	1.00
	Dimethyl Sulfoxide	12.73	2	0.00	1.00
	1,2-Propanediol	11.09	2	0.00	1.34
	Acetic Acid	8.32		8.32	0.25
	Methyl Methacrylate	6.66	2	0.00	1.00
	Liquefied Petroleum Gas	5.40		5.40	0.75
	Isobutyl Methacrylate	5.39	2	0.00	1.00
	Propane	4.29		4.29	0.48
	Dimethylformamide	3.19		3.19	1.00
	Unknown	2.27		2.13	
	Volatile Silicone Fluid	2.10	1	0.00	-
	Propylene Glycol	1.90	2	0.00	1.00
	Decahydronaphthalene	1.75		1.75	1.18
	Naphtha	1.56		1.56	1.05
	Ethyl Acetate	1.40		1.40	0.21
	2-Bromo-2-Chloro-1,1,1-Trifluoroethane	1.21	2	0.00	0.03
	Misc	4.43		4.43	
	Total	1635.44		1535.76	0.64
	All Health Use Products	6,888		5,477	
Miscellaneous Personal Care Products					
1901	Hand cleaners and soaps				
	Unknown	5174.34		1765.07	
	Petroleum Distillate	4869.29		4869.29	1.30
	Mineral Spirits	1920.96		1920.96	1.30
	Isoparaffin	1141.03	2	0.00	1.50
	D-Limonene	570.54		570.54	2.00
	Tall Oil Fatty Acids	471.65	2	0.00	1.00
	Alcohols, C10-C12, Ethoxylated, Propoxylated	436.54	2	0.00	1.00
	C10-15 Saturated Hydrocarbon	280.07		280.07	1.17
	Sodium Laureth Ether Sulfate	201.47	2	0.00	1.00
	Naphtha	177.10		177.10	1.05
	Betaine	57.76	2	0.00	1.00
	Ammonium Laureth Sulfate	52.55	2	0.00	1.00
	Sulfonated Castor Oil	48.11	2	0.00	1.00
	Mineral Spirits	46.35		46.35	1.30
	Norpar 15	45.61	2	0.00	1.00
	Sodium Lauryl Sulfate	32.50	2	0.00	1.00
	Dimethyl Glutarate	24.45	2	0.00	1.04
	Ethanol	22.82		22.82	1.34
	Fatty Diethanolamide	21.62	2	0.00	1.00
	C11-12 Isoparaffin	21.15	2	0.00	1.20
	Alkyl Olefin Sulfonate, Sodium Salt	17.51	2	0.00	1.00
	Intrasol FA 12/18/5	10.00		10.00	1.40
	Ethanolamine	7.58		7.58	3.60
	Isopropanol	6.99		6.99	0.54
	Coconut Oil Soap Mixture	6.83	2	0.00	1.00
	Dimethyl Adipate	6.13	2	0.00	1.00
	Lauramide	5.90	2	0.00	1.00
	Oleic Acid	5.11	2	0.00	1.00
	Parachlorometoxyleneol	4.21		4.21	0.06
	Coconut Diethanolamine	4.01	2	0.00	1.00
	Cycloryl Ank Mfg By Rhone-Poulenc	3.87		3.87	1.00
	Sulfated Castor Oil	3.77	2	0.00	1.00
	Styrene Acrylic Emulsion	3.15	2	0.00	1.00
	Diethanolamine	3.08		3.08	4.90

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory
Specification of Product Categories
1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
				Tons	
	Wickenol	2.81	2	0.00	1.00
	Alkyl Olefin Sulfonate, Sodium Salt	2.40	2	0.00	1.00
	Cocamidopropyl Amino Betane	1.77	2	0.00	1.00
	Ammonium Laureth Sulfate	1.28	2	0.00	1.00
	N-Propoxypropanol	1.17		1.17	2.04
	Fragrance	0.00		3057.06	2.00
	Misc	7.18		7.18	
	Total	15720.66		12753.34	1.53
1902	Rubbing alcohol¹				
	Isopropanol	22181.38		6000.18	0.54
	Isopropyl Alcohol	579.25		156.69	0.54
	Ethanol	266.26		72.02	1.34
	Misc	0.39		0.11	
	Total	23027.28		6229.00	0.55
1903	Shaving creams, gels, etc.				
	Unknown	1343.03		1288.87	
	Isobutane	491.35		491.35	1.21
	Ethanol	5.84		5.84	1.34
	Ammonium Laureth Sulfate	3.05	2	0.00	1.00
	Triethanolamine	1.97	2	0.00	6.30
	Propylene Glycol	1.91	2	0.00	1.00
	Mineral Oil	1.89	2	0.00	1.40
	Fragrance	0.00		47.99	2.00
	Misc	1.24		1.24	
	Total	1850.28		1835.29	1.28
1999	Other misc. personal care				
	Ethanol	3109.67		3109.67	1.34
	Unknown	462.15		293.91	
	Mineral Oil	352.44	2	0.00	1.40
	Propylene Glycol	283.16	2	0.00	1.00
	Isopropanol	206.23		206.23	0.54
	Isobutane	71.98		71.98	1.21
	Liquefied Petroleum Gas	4.24		4.24	0.75
	Witch Hazel	2.90	2	0.00	0.50
	Acetone	2.38	1	0.00	0.56
	Butane/Propane	2.10		2.10	0.75
	Fragrance	0.00		119.40	2.00
	Misc	0.09		0.09	
	Total	4497.34		3807.62	1.31
	All Misc Pers Care Prod	45,096		24,625	
Household Products					
Hard Surface Cleaners					
2101	General purpose cleaners				
	Pine Oil	7992.95		7992.95	1.90
	Unknown	5534.23		4810.84	
	Isopropanol	3502.11		3502.11	0.54
	2-Butoxyethanol	1576.98		1576.98	0.97
	2-Butoxyethanol	1485.24		1485.24	0.97
	Stoddard Solvents	1248.05		1248.05	1.40
	D-Limonene	1132.10		1132.10	2.00
	Synthetic Pine Oil	918.46		918.46	1.90
	Petroleum Distillate	352.25		352.25	1.30
	Glycol Ether	309.22	2	0.00	1.00
	Isobutane/Propane	304.76		304.76	0.85
	Ethanolamine	301.32		301.32	3.60
	Ethylene Glycol Monobutylether	280.06		280.06	0.97
	Dipropylene Glycol Methyl Ether	233.79	2	0.00	0.94
	Mineral Spirits	118.23		118.23	1.30
	2-Butoxyethanol	99.03		99.03	0.97
	Succinate Tartrate 122467-32-7	71.25	2	0.00	1.00
	Orange Oil	69.02		69.02	2.00

Attachment B - CSRA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

	Reported	Product	Adjusted	
	RVOC	RVOC	RVOC	MIR
	Tons	Code	Inventory	Value
	Tons		Tons	
2-Butoxyethanol	65.54		65.54	0.97
Butyl	63.44		63.44	0.67
Ammonium Laureth/Pareth 25 (w/20% Ethanol)	51.27	2	0.00	1.00
EEP Solvent	50.82		50.82	1.40
Propylene Glycol	38.06	2	0.00	1.00
Sodium Sesquicarbonate	37.18	2	0.00	1.00
Light Petroleum Distillate	27.97		27.97	1.50
Isobutane	27.58		27.58	1.21
Tripropylene Glycol	27.50	2	0.00	1.00
Diethylene Glycol Monomethyl Ether	27.06	2	0.00	0.96
Mineral Spirits	26.31		26.31	1.30
Hydrocarbon Propellant	26.11		26.11	0.75
Dipropylene Glycol Monomethyl Ether	24.61	2	0.00	0.94
Isopropyl Alcohol	22.89		22.89	0.54
Hexylene Glycol	18.84	2	0.00	1.54
Alkali Surfactant	17.72	2	0.00	1.00
Steel CS-460	16.91	2	0.00	1.00
Isoparaffin	16.41	2	0.00	1.50
Diethylene Glycol Methyl Ether	16.31	2	0.00	0.96
Meta Cresol 36/38	16.18	2	0.00	2.31
2-Butoxyethanol	14.24		14.24	0.97
Distilled Tan Oil	13.77		13.77	1.40
Sodium Xylene Sulfonate	13.35	2	0.00	1.00
Ethanol	13.08		13.08	
Dipropylene Glycol Ethyl Ether	10.60	2	0.00	0.94
2-Butoxyethanol	9.03		9.03	0.97
Dipropylene Glycol Monomethyl Ether	8.96	2	0.00	0.94
Cyclohexanol	8.95	2	0.00	
Liquefied Petroleum Gas	8.81		8.81	
Mixed Xylenols	8.73		8.73	2.31
Triethanolamine 85%	8.69	2	0.00	5.36
Dipropylene Glycol Monomethyl Ether	8.40	2	0.00	
Naphtha	8.30		8.30	1.05
Kerosene	7.62		7.62	
Sodium Xylene Sulfonate	7.51	2	0.00	1.00
POE Phosphate Ester	7.39	2	0.00	1.00
Dipropylene Glycol Butyl Ether	6.92	2	0.00	0.94
Fragrance	6.92		537	2.00
Ethylene Glycol Monobutylether	6.54		6.54	0.97
Butoxy Ethoxy Propanol	4.89		4.89	2.04
Ethylene Monobutyl Cellusolve	4.19		4.19	0.97
Methanol	4.02		4.02	0.56
Isobutane/Propane	3.82		3.82	0.85
Mannethanolamine	3.75		3.75	3.60
Methoxyisopropanol	3.58		3.58	2.04
Pine Terpene Alcohol	3.45		3.45	2.00
Butly Oxitol	3.39		3.39	1.00
Perchloroethylene	3.36	1	0.00	0.03
Propane	3.27		3.27	0.48
2-Butoxyethanol	3.20		3.20	0.97
Tetrachloroethylene	3.09	1	0.00	0.03
Ethylene Glycol N-Butyl Ether	3.03		3.03	0.94
Butyl Carbitol	2.99	2	0.00	1.00
Monoethanolamine	2.86		2.86	3.60
Coco Diethanolamide	2.60	2	0.00	1.00
Ethylene Glycol Phenyl Ether	2.36	2	0.00	1.00
Dodecylbenzene Sulfonic Acid	2.30	2	0.00	1.00
N-Methyl-2-Pyrrolidone	1.79	2	0.00	1.30
P-Menthadienes	1.78		0.00	2.00
2-Butoxyethanol	1.48		1.48	0.97
Cyclohexane	1.39		1.39	1.28
Poly Solv EB	1.31		1.31	1.40
Butoxypropanol	1.25		1.25	2.04
Alkyl Phenol Ethoxylate	1.02	2	0.00	1.00

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Tons	Value
	Misc	15.44		15.44	
	Total	26411.18		25,193.04	1.47
2102	Glass cleaners				
	Isopropanol	1441.20		1441.20	0.54
	Unknown	1233.55		991.61	
	2-Butoxyethanol	1143.69		1143.69	0.97
	2-Butoxyethanol	1040.56		1040.56	0.97
	Ethanol	783.79		783.79	1.34
	2-Butoxyethanol	586.86		586.86	0.97
	Isobutane	232.18		232.18	1.21
	Ethylene Glycol Monobutylether	208.53		208.53	0.97
	2-Butoxyethanol + Liquified Petroleum Gas	129.45		129.45	0.86
	2-Butoxyethanol	103.68		103.68	0.97
	Isopropyl Alcohol	66.99		66.99	0.54
	Dipropylene Glycol Methyl Ether	64.69	2	0.00	0.94
	Glycol Ether	55.19	2	0.00	1.00
	Methanol	47.53		47.53	0.56
	Propylene Glycol	41.41	2	0.00	1.00
	Butane/Propane	28.56		28.56	0.75
	Isobutane/Propane	17.97		17.97	0.85
	Butane	16.75		16.75	1.02
	Propane	16.48		16.48	0.48
	2-Butoxyethanol + Liquified Petroleum Gas	14.10		14.10	0.86
	Morpholine	11.77		11.77	0.50
	Mineral Spirits	11.46		11.46	1.30
	Diethylene Glycol Ethyl Ether	8.60	2	0.00	0.96
	Mineral Spirits	6.57		6.57	1.30
	Steol CS-460	5.54	2	0.00	1.00
	Dimethyl Carbinol	3.10		3.10	0.50
	Isopropane	2.56		2.56	0.54
	Butyl	2.43		2.43	0.67
	Hydrocarbon Solvent	2.42		2.42	1.40
	2-Butoxyethanol	2.24		2.24	0.97
	Cyclohexanol	2.11	2	0.00	1.00
	Ethanolamine	1.56		1.56	3.60
	Ethylene Glycol Monobutyl Ether	1.50		1.50	0.97
	Hexylene Glycol	1.43	2	0.00	1.54
	2-Butoxyethanol	1.15		1.15	0.97
	N-Butyl Alcohol	1.00		1.00	2.69
	Diacetone Alcohol	1.00		1.00	0.56
	Fragrance	0.00		217.18	2.00
	Misc	6.86		6.86	
	Total	7346.46		7142.73	0.95
2103	Oven cleaners				
	2-Butoxyethanol	616.04		616.04	0.97
	Butyl Carbitol	392.58	2	0.00	1.00
	Monoethanolamine	391.92		391.92	3.60
	Butane	369.73		369.73	1.02
	Isobutane	246.29		246.29	1.21
	Piethylene Butyl Ether	198.39	2	0.00	1.00
	Hydrocarbon Propellant	197.41		197.41	0.75
	Unknown	172.97		131.69	
	Tetrahydrofurfuryl Alcohol	30.23		30.23	1.80
	Propane	24.72		24.72	0.48
	D-Limonene	23.12		23.12	2.00
	Dipropylene Glycol Methyl Ether	22.21	2	0.00	0.94
	Isopropanol	20.44		20.44	0.54
	Hexylene Glycol	11.96	2	0.00	1.54
	Ethylene Glycol Monobutylether	11.87		11.87	0.97
	Propylene Glycol	11.60	2	0.00	1.00
	Phenoxyethanol	10.78	2	0.00	1.00
	PPg-2 Methyl Ether	9.57	2	0.00	1.00
	Sodium Hydroxide	7.77	2	0.00	1.00
	2-Butoxyethanol	4.17		4.17	0.97

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory
Speciation of Product Categories
1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
				Tons	
	Isobutane/Propane	3.55		3.55	0.85
	Butane/Isobutane (mixture)/Isobutane (mixture)	3.35		3.35	1.12
	Ethanolamine	3.21		3.21	3.60
	2-Butoxyethanol	2.06		2.06	0.97
	Diethylene Glycol Ethyl Ether	1.87	2	0.00	0.96
	Liquefied Petroleum Gas	1.81		1.81	0.75
	Butyl Carbitol	1.43	2	0.00	1.00
	Isobutane/Propane	1.17		1.17	0.85
	Misc	7.25		7.25	
	Total	2799.47		2090.03	1.53
2104	Tub, tile, and sink cleaners				
	Isobutane	1443.57		1443.57	1.21
	Unknown	828.84		766.91	
	Isobutane/Propane	79.85		79.85	0.85
	Ethanolamide	65.88		65.88	3.60
	2-Butoxyethanol	59.74		59.74	0.97
	2-Butoxyethanol	30.57		30.57	0.97
	Propane	19.05		19.05	0.48
	2-Butoxyethanol	14.11		14.11	0.97
	Isopropanol	11.45		11.45	0.54
	Aminomethyl Propanol	10.39	2	0.00	1.00
	Dowanol EP	8.25		8.25	1.00
	Ethylene Glycol Monobutylether	2.54		2.54	0.97
	Butane/Propane	2.32		2.32	0.75
	Para-Dichlorobenzene	1.92		1.92	0.06
	Dipropylene Glycol Monomethyl Ether	1.49	2	0.00	0.94
	Diethylene Glycol Monoethyl Ether	1.45	2	0.00	0.96
	Glycol Ether	1.41	2	0.00	1.00
	Diethylene Glycol Monoethyl Ether	1.10	2	0.00	0.96
	Fragrance	0.00		57.21	2.00
	Misc	7.25		7.25	
	Total	2591.18		2570.63	1.28
2105	Mildew removers				
	Unknown	14.27		0.00	
	Fragrance	0.00		14.27	2.00
	Misc	0.84		0.84	
	Total	15.11		15.11	2.00
2106	Toilet bowl cleaners				
	Isopropanol	66.25		66.25	0.54
	Unknown	55.25		0.00	
	Pine Oil	44.83		44.83	1.90
	Isobornyl Acetate	22.41	2	0.00	1.00
	Hydrocarbon Propellant	12.19		12.19	0.75
	Propylene Glycol	8.87	2	0.00	1.00
	2-Butoxyethanol	3.48		3.48	0.97
	Diethylene Glycol Monobutyl Ether	2.78	2	0.00	0.96
	Fragrance	2.03		57.28	2.00
	Phosphoric Acid	2.03	2	0.00	1.00
	Para-Dichlorobenzene	1.74		1.74	0.06
	Ethylene Glycol Monobutylether	1.39		1.39	0.97
	Dipropylene Glycol Monobutylether	1.02	2	0.00	0.94
	Misc	2.64		2.64	
	Total	226.91		189.80	1.33
2107	Rust stain removers				
	Misc	1.21		1.21	
	Total	1.21		1.21	1.46
2108	Metal cleaners				
	Mineral Spirits	861.00		861.00	1.30
	Petroleum Distillate	88.09		88.09	1.30
	D-Limonene	74.00		74.00	2.00
	Unknown	65.68		52.37	
	Propane	55.19		55.19	0.48
	Mineral Oil	54.08	2	0.00	1.40
	IC12 Alpha Olefin	46.00		46.00	1.52

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory
 Speciation of Product Categories
 1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
		Tons		Tons	
	Mineral Spirits	43.95		43.95	1.30
	Isobutane	39.94		39.94	1.21
	Kerosene	37.18		37.18	1.30
	2-Butoxyethanol	29.34		29.34	0.97
	Hydrocarbon Solvent	21.25		21.25	1.40
	Isopropanol	19.83		19.83	0.54
	Isoparaffin	12.79	2	0.00	1.50
	P-Menthadienes	12.66		12.66	2.00
	N-Butane	9.92		9.92	1.02
	Ethanolamine	9.11		9.11	3.60
	Ethanol	7.86		7.86	1.34
	Synthetic Isoparaffinic Hydrocarbon	7.81	2	0.00	1.40
	Liquefied Petroleum Gas	7.17		7.17	0.75
	Xylene	5.65		5.65	7.00
	2-Butoxyethanol	4.14		4.14	0.97
	Short Range Mineral Spirits	4.14		4.14	1.40
	Isobutane/Propane	3.87		3.87	0.85
	Butane/Propane	3.72		3.72	0.75
	Butane/Propane	3.61		3.61	0.75
	Kaydol Mineral Oil	3.21	2	0.00	1.40
	Propylene Glycol	2.84	2	0.00	1.00
	Diethylene Glycol Monobutyl Ether	2.80	2	0.00	0.96
	Methanol	2.61		2.61	0.56
	M-Cresol	2.11	2	0.00	2.31
	Isobutane/Propane	2.10		2.10	0.85
	Ethylene Glycol Monobutylether	1.98		1.98	0.97
	Pine Oil	1.79		1.79	1.90
	Octylphenol Ether	1.49	2	0.00	1.00
	Oleic Acid	1.46	2	0.00	1.00
	Fragrance	0.00		10.15	2.00
	Misc	8.54		8.54	
	Total	1558.91		1467.16	1.33
2109	Soap scouring pads				
	Unknown	91.30		91.30	
	Petroleum Distillate	1.94		1.94	1.30
	Misc	0.00		0.00	
	Total	93.24		93.24	1.30
2199	Other hard surface cleaners				
	2-Butoxyethanol	1581.25		1,581.25	0.97
	Unknown	919.60		614.38	
	Ethanolamine	705.19		705.19	3.60
	Petroleum Distillate	439.67		439.67	1.30
	Ethylene Glycol Monobutylether	401.12		401.12	0.97
	Naphtha	365.28		365.28	1.05
	Isopropanol	306.52		306.52	0.54
	2-Butoxyethanol	238.96		238.96	0.97
	D-Limonene	230.93		230.93	2.00
	Mineral Spirits	143.77		143.77	1.30
	Glycolic Acid	133.00	2	0.00	1.00
	Glycol Ether	109.76	2	0.00	1.00
	1,2-Propanediol	106.09	2	0.00	1.34
	2-Butoxyethanol	89.24		89.24	0.97
	Pine Oil	87.92		87.92	1.90
	Propylene Glycol	73.27	2	0.00	1.00
	Isobutane	65.89		65.89	1.21
	Ethylene Glycol N-Butyl Ether	64.12		64.12	0.94
	Citrus Terpenes	62.96		62.96	2.00
	2-Butoxyethanol	55.74		55.74	0.97
	Tetrachloroethylene	55.71	1	0.00	0.03
	Triethanolamine	49.63	2	0.00	6.30
	M-Pyrol	47.06	2	0.00	12.72
	Orange Oil	38.95		38.95	2.00
	Toluene	35.42		35.42	2.70
	Hydrocarbon Propellant	33.26		33.26	0.75

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

	Reported	Product	Adjusted	
	RVOC	RVOC	RVOC	MIR
	Tons	Code	Tons	Value
Orange Oil Terpenes	31.53		31.53	2.00
Coconut Oil Soap Mixture	29.73	2	0.00	1.00
Dipropylene Glycol Methyl Ether	28.79	2	0.00	0.94
Kerosene	24.59		24.59	1.30
Acetone	23.86	1	0.00	0.56
Perchloroethylene	23.43	1	0.00	0.03
Glycerine 99	22.74	2	0.00	1.00
Ethylene Glycol Monomethyl Ether	20.91		20.91	0.97
Methanol	20.62		20.62	0.56
Diethylene Glycol Butyl Ether	20.62	2	0.00	0.96
2-Butoxyethanol	19.12		19.12	0.97
Poly Solv EB	18.34		18.34	1.40
Ethanolamide	15.22		15.22	3.60
Mineral Spirits (01-1107)	14.45		14.45	1.30
Mineral Spirits	13.26		13.26	1.30
2-Butoxyethanol	12.56		12.56	0.97
Cyclohexane	10.76		10.76	1.28
Monoethanolamine	10.61		10.61	3.60
Liquefied Petroleum Gas	10.55		10.55	0.75
Xylol	10.46		10.46	1.13
Propane	9.32		9.32	0.48
Butyl Carbitol	9.11	2	0.00	1.00
4-Isopropenyl-1-Methylcyclohexene	8.44		8.44	4.11
Dipropyleneglycol Monomethyl Ether	7.92	2	0.00	0.94
Methyl Isobutyl Ketone	7.59		7.59	0.85
Isoparaffin	7.51	2	0.00	1.50
Diethylene Glycol Monoethyl Ether	7.12	2	0.00	0.96
Hexylene Glycol	6.11	2	0.00	1.54
Butane/Propane	5.97		5.97	0.75
2-Butoxyethanol	5.85		5.85	0.97
Mineral Oil	5.76	2	0.00	1.40
Terpineol	5.65		5.65	2.00
Ortho Dichlorobenzene	5.55		5.55	0.06
Ethanol	5.55		5.55	1.34
Hydrocarbon Solvent	5.43		5.43	1.40
Morpholine	4.69		4.69	0.50
Butane/Propane	4.67		4.67	0.75
Diethylene Glycol Monomethyl Ether	4.46	2	0.00	0.96
Ethylene Glycol	4.09	2	0.00	1.92
Ethylene Glycol Monobutyl Ether	3.84		3.84	0.97
1-Butoxypropanol	3.81		3.81	0.97
Ethylene Glycol Monoethyl Ether	3.64		3.64	0.97
Diethylene Glycol Monoethyl Ether	3.40	2	0.00	0.96
Fuel Oil	3.36		3.36	6.00
Alcohols, C10-C12, Ethoxylated, Propoxylated	3.32	2	0.00	1.00
Xylene	3.29		3.29	7.00
Triethanolamine 85%	3.19	2	0.00	5.36
Ethylene Glycol Butyl Ether Acetate	3.12	2	0.00	0.97
Propanol	3.09		3.09	2.26
N-Butoxypropanol	2.97		2.97	2.04
Terpineol	2.90		2.90	2.00
Mineral Spirits	2.44		2.44	1.30
2-Butoxyethanol	2.37		2.37	0.97
Diacetone Alcohol	2.27		2.27	0.56
Dipropylene Glycol Monomethyl Ether	2.24	2	0.00	0.94
Methoxypropanol	2.22		2.22	0.95
Isopropanolamine Mixture	2.14		2.14	5.00
S-Butoxyethanol	2.10		2.10	1.48
Tripropylene Glycol Methyl Ether	2.03	2	0.00	1.00
Isopropyl Alcohol	1.94		1.94	0.54
Diethylaminoethanol	1.82	2	0.00	0.96
Nonylphenol + 9EO Polyethoxylate	1.75	2	0.00	1.00
N-Butoxypropanol	1.72		1.72	2.04
Dipropylene Glycol Monomethyl Ether	1.51	2	0.00	0.94

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
				Tons	
	Cocamidopropyl Amino Betane	1.41	2	0.00	1.00
	Sec-N-N-Butyl Alcohol	1.37		1.37	2.69
	Orange Terpene	1.32		1.32	2.00
	2-Butoxyethanol	1.16		1.16	0.97
	Fragrance	0.00		226.34	2.00
	Misc	12.28		12.28	
	Total	7027.27		6,148.83	1.49
	All Hard Surface Cleaners	48,071		44,912	
Laundry Products					
2201	Detergents				
	Unknown	33530.40		9860.37	
	Sodium Tridecylbenzene Sulfonate	14435.94	2	0.00	1.00
	Ethoxylated Alcohol C12-16	8648.50	2	0.00	1.00
	Ethoxylated Alcohol C12-16	8356.15	2	0.00	1.00
	C12-C15 Ethoxylated Alcohol	7025.59	2	0.00	1.00
	Ethanol	6793.00		6793.00	1.34
	Sodium Xylene Sulfonate	852.12	2	0.00	1.00
	Petroleum Distillate	471.43		471.43	1.30
	Isopropanol	130.47		130.47	0.54
	Isoparaffin	108.22	2	0.00	1.50
	Sodium Tridecylbenzene Sulfonate	71.03	2	0.00	1.00
	Propylene Glycol	53.02	2	0.00	1.00
	Sodium Dodecylbenzenesulfonate	49.48	2	0.00	1.00
	2-Butoxyethanol	47.14		47.14	0.97
	2-Butoxyethanol	27.23		27.23	0.97
	Ethanolamine	26.07		26.07	3.60
	Alcohols, C10-C12, Ethoxylated, Propoxylated	19.77	2	0.00	1.00
	Sodium Dodecylbenzene Sulfonate 40%	18.26	2	0.00	1.00
	Sodium Pareth-25 Sulfate (w/11% Ethanol)	13.28	2	0.00	1.00
	Ethoxy Ethanol	9.77	2	0.00	3.31
	Ethoxy Sulfate, Neodol 25-3s	9.77	2	0.00	1.00
	Alkyl Phenol Ethoxylate	9.59	2	0.00	1.00
	85% Triethanolamine	9.14	2	0.00	5.36
	Witconate 1260	5.75	2	0.00	1.00
	Ethylene Glycol Monobutylether	4.87		4.87	0.97
	Methanol	4.33		4.33	0.56
	Fragrance	3.62		14,136	2.00
	Hexylene Glycol	2.96	2	0.00	1.54
	Accosoft 750	2.92	2	0.00	1.00
	Pine Oil	2.58		2.58	1.90
	Varisoft 3690N	2.22		2.22	0.75
	Diethylene Glycol Ethyl Ether	1.94	2	0.00	0.96
	D-Limonene	1.71		1.71	2.00
	Nonylphenol Ethoxylate	1.05	2	0.00	1.00
	Misc	2.52		2.52	
	Total	80751.84		31,510	1.77
2202	Soaps				
	2-Butoxyethanol	1.36		1.36	0.97
	Misc	0.38		0.38	
	Total	1.74		1.74	0.97
2203	Presoaks				
	Sodium Tridecylbenzene Sulfonate	220.81	2	0.00	1.00
	Mineral Spirits	16.01		16.01	1.30
	Misc	0.58		0.58	
	Total	237.40		16.59	1.30
2204	Prewash spot removers				
	Isoparaffin	1266.23	2	0.00	1.50
	Hydrocarbon Propellant	483.02		483.02	0.75
	Dipropylene Glycol Monomethyl Ether	352.03	2	0.00	0.94
	Mineral Spirits	343.67		343.67	1.30
	Propane	335.72		335.72	0.48
	Petroleum Distillate	317.20		317.20	1.30

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
				Tons	
	Mineral Spirits	300.88		300.88	1.30
	Unknown	222.00		0.00	
	Propellant (Liquified Petroleum Gas)	90.00		90.00	0.75
	PPG-2 Methyl Ether	82.50	2	0.00	1.00
	Isobutane	47.56		47.56	1.21
	Propylene Glycol	31.11	2	0.00	1.00
	Isopropanol	15.47		15.47	0.54
	2-Butoxyethanol	6.77		6.77	0.97
	2-Butoxyethanol	5.98		5.98	0.97
	Ethanolamine	3.54		3.54	3.60
	Diethylene Glycol Methyl Ether	1.70	2	0.00	0.96
	D-Limonene	1.68		1.68	2.00
	140 Solvent	1.14		1.14	1.40
	Fragrance	0.00		222.00	2.00
	Misc	3.19		3.19	
	Total	3911.39		2177.82	1.09
2205	Bleaches				
	Unknown	714.00		0.00	
	Sodium Dichloro-S-Triazinethione Dihydrate	1.45	2	0.00	1.00
	Fragrance	0.00		714.00	2.00
	Misc	0.09		0.09	
	Total	715.54		714.09	2.00
2206	Whiteners/brighteners				
	Unknown	15.59		0.00	
	Fragrance	0.00		15.59	2.00
	Misc	0.04		0.04	
	Total	15.63		15.63	2.00
2207	Bluing				
	Misc	0.16		0.16	
	Total	0.16		0.16	1.46
2208	Fabric softeners				
	Unknown	5830.64		2889.75	
	Isopropanol	143.50		143.50	0.54
	Hexylene Glycol	46.35	2	0.00	1.54
	Fragrance	25.15		2,934.47	2.00
	Ethanol	18.44		18.44	1.34
	Tallow Imid Methosulfate	15.84	2	0.00	1.00
	Fragrance	3.02		3.02	2.00
	Glycolic Acid	1.86	2	0.00	1.00
	Accosoft 750	1.78	2	0.00	1.00
	Misc	3.25		3.25	
	Total	6089.83		5,992.42	1.93
2209	Water conditioners				
	Unknown	7.95		7.95	
	Isopropanol	1.69		1.69	0.54
	Misc	0.00		0.00	
	Total	9.64		9.64	0.54
2210	Starches, sizings, etc.				
	Isobutane	4230.93		4230.93	1.21
	Unknown	147.22		83.65	
	Propane	17.16		17.16	0.48
	Isopropanol	7.50		7.50	0.54
	Fragrance	0.00		63.57	2.00
	Misc	1.73		1.73	
	Total	4404.54		4404.54	1.22
2299	Other laundry products				
	Petroleum Distillate	856.66		856.66	1.30
	Stoddard Solvents	267.65		267.65	1.40
	Methyl Isobutyl Ketone	73.10		73.10	0.85
	Light Petroleum Distillate	44.70		44.70	1.50
	Dipropylene Glycol Methyl Ether	42.40	2	0.00	0.94
	Unknown	18.06		0.00	
	Cyclohexanol	10.15	2	0.00	1.00
	Fragrance	8.92		26.98	2.00

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory
Specification of Product Categories
1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
				Tons	
	Isopropanol	6.52		6.52	0.54
	Isobutane	3.57		3.57	1.21
	Ethylene Glycol Monobutylether	3.54		3.54	0.97
	Misc	1.89		1.89	
	Total	1337.16		1284.61	1.31
	All Laundry Products	97,475		46,127	
Fabric and Carpet Care Products					
2301	Carpet cleaners				
	Unknown	878.23		574.29	
	Isobutane	175.27		175.27	1.21
	Isobutane/Propane	97.05		97.05	0.85
	Alcohols, C10-C12, Ethoxylated, Propoxylated	88.28	2	0.00	1.00
	2-Butoxyethanol	63.64		63.64	0.97
	Isobutane/Propane	56.48		56.48	0.85
	Propylene Glycol	49.83	2	0.00	1.00
	Isopropanol	46.05		46.05	0.54
	Mineral Spirits	38.79		38.79	1.30
	Glycol Ether	34.48	2	0.00	1.00
	Aliphatic Hydrocarbons	27.20		27.20	1.30
	D-Limonene	24.33		24.33	2.00
	Ethylene Glycol Monobutylether	19.81		19.81	0.97
	Dipropylene Glycol Monomethyl Ether	18.37	2	0.00	0.94
	Butyl	15.67		15.67	0.67
	Dipropylene Glycol Methyl Ether	15.36	2	0.00	0.94
	Propane	13.33		13.33	0.48
	Diethylene Glycol Butyl Ether	9.17	2	0.00	0.96
	Witcolate A	8.14	2	0.00	1.00
	2-Butoxyethanol	7.96		7.96	0.97
	2-Propanol-1-Butoxy	7.95		7.95	2.04
	Mineral Spirits	4.89		4.89	1.30
	Diethylene Glycol Monoethyl Ether	3.90	2	0.00	0.96
	Methoxyisopropanol	3.17		3.17	2.04
	Tetrachloroethylene	2.96	1	0.00	0.03
	Stoddard Solvents	2.39		2.39	1.40
	Perchloroethylene	2.02	1	0.00	0.03
	Petroleum Distillate	1.88		1.88	1.30
	N-Butane	1.59		1.59	1.02
	Fragrance	0.00		214.22	2.00
	Misc	2.44		2.44	
	Total	1720.63		1,398.39	1.30
2302	Carpet deodorizers				
	Unknown	195.50		0.00	
	Ethanol	13.67		13.67	1.34
	Isopropanol	9.89		9.89	0.54
	Propylene Glycol	1.88	2	0.00	1.00
	Isobutane	1.00		1.00	1.21
	Fragrance	0.00		195.50	2.00
	Misc	2.44		2.44	
	Total	224.38		222.50	1.89
2303	Upholstery cleaners				
	Isobutane	66.36		66.36	1.21
	Unknown	34.01		33.20	
	Isobutane/Propane	26.25		26.25	0.85
	Mineral Spirits	17.75		17.75	1.30
	Naphtha (Petroleum) Heavy Alkylate	17.32		17.32	0.80
	Methoxyisopropanol	8.18		8.18	2.04
	2-Butoxyethanol	8.18		8.18	0.97
	Isopropanol	7.94		7.94	0.54
	Ethanol	7.82		7.82	1.34
	Propylene Glycol Monomethyl Ether	3.50		3.50	0.95
	Propanol, 1 (or 2)-2-Methoxymethylethoxy	3.34	2	0.00	2.04
	Propylene Glycol	1.50	2	0.00	1.00

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
				Tons	
	Misc	0.17		0.17	
	Total	202.32		196.67	1.12
2304	Spot removers				
	Perchloroethylene	174.87	1	0.00	0.03
	Propane	121.66		121.66	0.48
	Naphtha	100.25		100.25	1.05
	Tetrachloroethylene	97.90	1	0.00	0.03
	Petroleum Distillate	95.37		95.37	1.30
	Light Petroleum Distillate	64.62		64.62	1.50
	2-Butoxyethanol	45.73		45.73	0.97
	Unknown	45.72		31.12	
	Toluene	39.06		39.06	2.70
	Mineral Spirits	37.35		37.35	1.30
	Mineral Spirits	25.34		25.34	1.30
	Ethanol	21.22		21.22	1.34
	Glycol Ether	18.75	2	0.00	1.00
	D-Limonene	12.51		12.51	2.00
	Liquefied Petroleum Gas	10.96		10.96	0.75
	Isopropanol	7.92		7.92	0.54
	Propanol	7.11		7.11	2.26
	Dispropylene Glycol Methyl Ether	6.98	2	0.00	1.00
	Isobutane	6.28		6.28	1.21
	Isopropyl Alcohol	6.05		6.05	0.54
	Aliphatic Hydrocarbons	5.83		5.83	1.30
	Trichloroethylene	5.38	1	0.00	0.03
	Glycerine	5.17	2	0.00	1.00
	Naphtha (Petroleum) Heavy	4.71		4.71	0.80
	Acetic Acid	4.62		4.62	0.25
	Perchloroethylene	3.95	1	0.00	0.03
	Acetic Acid	3.67		3.67	0.25
	Propylene Glycol	3.16	2	0.00	1.00
	2-Butoxyethanol	2.98		2.98	0.97
	Methyl Iso Amyl Ketone	2.87		2.87	0.75
	Heptane	2.83		2.83	0.81
	Alcohols, C10-C12, Ethoxylated, Propoxylated	2.73	2	0.00	1.00
	Diethylene Glycol Monoethyl Ether	2.04	2	0.00	0.96
	Isobutane/Propane	1.58		1.58	0.85
	Propylene Glycol Monomethyl Ether	1.45		1.45	0.95
	Dowanol EP	1.11		1.11	1.00
	Misc	5.00		5.00	
	Total	1004.73		669.20	1.16
2305	Fabric stain repellants				
	Mineral Spirits	563.41		563.41	1.30
	Petroleum Distillate	159.64		159.64	1.30
	Unknown	155.87		150.04	
	2-Butoxyethanol	94.26		94.26	0.97
	Isobutane	38.77		38.77	1.21
	Heptane	13.40		13.40	0.81
	Stoddard Solvents	10.36		10.36	1.40
	1,1,2-Trichloro-1,2,2-Trichloro-Ethane	4.78	1	0.00	0.07
	Mineral Spirits	2.91		2.91	1.30
	Fragrance	0.00		5.14	2.00
	Misc	3.60		3.60	
	Total	1047.00		1041.53	1.26
2306	Water repellants				
	Mineral Spirits	2.52		2.52	1.30
	Misc	0.88		0.88	
	Total	3.40		3.40	1.30
2307	Fabric dyes				
	Diethylene Glycol	1.25	2	0.00	0.96
	Propylene Glycol	1.08	2	0.00	1.00
	Misc	0.01		0.01	
	Total	2.34		0.01	1.46
2308	Antistatic sprays				

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	MIR
		RVOC	RVOC	RVOC	Value
		Tons	Code	Tons	
	Ethanol	12.85		12.85	1.34
	Liquefied Petroleum Gas	3.47		3.47	0.75
	Isopropanol	3.04		3.04	0.54
	Misc	2.50		2.50	
	Total	21.86		21.86	1.11
2309	Dry cleaning fluids				
	Perchloroethylene	831.16	1	0.00	0.03
	Perchloroethylene	659.00	1	0.00	0.03
	Naphtha	51.94		51.94	1.05
	Mineral Spirits	20.74		20.74	1.30
	Naphtha (Petroleum) Heavy Alkylate	20.66		20.66	0.80
	Xylene	13.93		13.93	7.00
	Stoddard Solvents	12.05		12.05	1.40
	Perchloroethylene	9.50	1	0.00	0.03
	Unknown	6.04		0.48	
	Fragrance	2.83		2.83	2.00
	Propylene Glycol Monomethyl Ether	1.21		1.21	0.95
	Propanol, 1 (or 2)-2-Methoxymethylethoxy	1.21	2	0.00	2.04
	Misc	0.67		0.67	
	Total	1630.94		124.51	1.78
2399	Other fabric/carpet care				
	Isopropanol	98.58		98.58	0.54
	Diethylene Glycol Butyl Ether	30.09	2	0.00	0.96
	Mineral Spirits	9.85		9.85	1.30
	Xylol	6.69		6.69	1.13
	Acetic Acid	5.55		5.55	0.25
	Isobutane	5.15		5.15	1.21
	Ethanol	4.90		4.90	1.34
	Propane	4.78		4.78	0.48
	Unknown	4.25		3.15	
	Lactol Spirits	2.80		2.80	1.00
	Dipropylene Glycol Methyl Ether	2.68	2	0.00	0.94
	Glycol Ether	2.48	2	0.00	1.00
	Perchloroethylene	2.45	1	0.00	0.03
	Petroleum Distillate	1.63		1.63	1.30
	Propanol	1.30		1.30	2.26
	Fragrance	0.00		0.30	2.00
	Misc	3.83		3.83	
	Total	187.01		148.51	0.70
	All Fabric/Carpet Care	6,045		3,827	
	Dishwashing Products				
2401	Dish detergents (manual)				
	Ethanol	18167.03		18167.03	1.34
	Unknown	4484.25		3070.91	
	Dodecylbenzenesulfonate	351.67	2	0.00	1.00
	Ammonium Laureth/Pareth 25 (w/20% Ethanol)	251.47	2	0.00	1.00
	Witcodet 100	195.86	2	0.00	1.00
	Sodium Xylene Sulfonate	134.72	2	0.00	1.00
	Witcodet 100	26.91	2	0.00	1.00
	Isopropanol	23.29		23.29	0.54
	Steol CS-460	20.49	2	0.00	1.00
	Alcohols, C10-C12, Ethoxylated, Propoxylated	6.22	2	0.00	1.00
	Dodecylbenzene Sulfonic Acid	6.10	2	0.00	1.00
	Alpha Olefin Sulfonate 40%	5.82	2	0.00	1.00
	Propylene Glycol	4.60	2	0.00	1.00
	Fragrance	3.44		1275.38	2.00
	Fatty Alkanolamide	2.88	2	0.00	1.00
	Urea	2.73	2	0.00	1.00
	Cocoamidopropyl Amine Oxide 35%	1.97	2	0.00	1.00
	Bio-Terge LD-100	1.83	2	0.00	1.34
	2-Butoxyethanol	1.75		1.75	0.97
	Sodium Lauryl Ether Sulfate 50%	1.63	2	0.00	1.00

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
	Tetrasodium EDTA	1.50	2	0.00	1.00
	Cocoamide Dea	1.44	2	0.00	1.00
	Biosoft 190	1.29	2	0.00	1.00
	Misc	5.74		5.74	
	Total	23704.63		22544.10	1.38
2402	Dish detergents (machine)				
	Unknown	3292.74		2739.63	
	Witcodet 100	195.86	2	0.00	1.00
	Ethanol	29.27		29.27	1.34
	Isobutane	21.36		21.36	1.21
	Fragrance	10.40		395.20	2.00
	Isopropanol	8.87		8.87	0.54
	Sodium Dichloro-S-Triazinethione Dihydrate	8.35	2	0.00	1.00
	Propane	5.22		5.22	0.48
	Accosoft 445N	1.74	2	0.00	1.00
	Hydroxyacetic Acid	1.45		1.45	0.25
	Sodium Dichloro-S-Triazinethione Dihydrate	1.09	2	0.00	1.00
	Misc	0.70		0.70	
	Total	3577.05		3201.70	1.87
2403	Rinse aids				
	Propylene Glycol	69.83	2	0.00	1.00
	Isopropanol	54.05		54.05	0.54
	Unknown	19.25		10.61	
	Lemon Bouquet	14.00		14.00	2.00
	Sodium Xylene Sulfonate	2.13	2	0.00	1.00
	Misc	1.14		1.14	
	Total	160.40		79.80	0.84
2404	Film and spot removers				
	Phosphoric Acid	1.26	2	0.00	1.00
	Misc	0.80		0.80	
	Total	2.06		0.80	1.46
2499	Other dishwashing products				
	Unknown	3.22		3.22	
	Misc	1.15		1.15	
	Total	4.37		4.37	1.46
	All Dishwashing Products			25,831	
	Waxes and Polishes				
2501	Furniture waxes and polishes				
	Isoparaffin	3911.22	2	0.00	1.50
	Hydrocarbon Propellant	1908.31		1908.31	0.75
	Mineral Spirits	273.99		273.99	1.30
	Isobutane/Propane	273.83		273.83	0.85
	Petroleum Distillate	187.56		187.56	1.30
	Isobutane	160.93		160.93	1.21
	Unknown	160.36		59.76	
	Stoddard Solvents	131.21		131.21	1.40
	Hexane	80.95		80.95	0.98
	Propane	43.87		43.87	0.48
	Naphtha	41.91		41.91	1.05
	Distillates (Petroleum), Hydrotreated Light	29.46		29.46	1.70
	Isobutane/Propane	22.54		22.54	0.85
	Heptane	22.05		22.05	0.81
	Mineral Spirits	17.22		17.22	1.30
	Butane/Propane	16.92		16.92	0.75
	Butane/Propane/Isobutane	11.46		11.46	0.89
	Paraffinic Distillate	4.21		4.21	1.50
	Hydrocarbon Solvent	3.89		3.89	1.40
	Light Petroleum Distillate	3.48		3.48	1.50
	Lemon Oil	3.17		3.17	2.00
	Mineral Oil	3.06	2	0.00	1.40
	Ethanolamine	1.91		1.91	3.60
	Butane	1.69		1.69	1.02

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported		Adjusted	
		RVOC	Product	RVOC	MIR
		Tons	Code	Inventory	Value
				Tons	
	Technical Mineral Oil	1.33	2	0.00	1.00
	Cyclomethicone	1.24	1	0.00	-
	C3-C4 Alkane Propellant	1.02		1.02	0.75
	Fragrance	0.00		31.91	2.00
	Misc	5.98		5.98	
	Total	7324.77		3339.23	0.92
2502	Floor waxes and polishes				
	Mineral Spirits	1277.57		1277.57	1.30
	Naphtha	836.78		836.78	1.05
	Unknown	714.10		498.69	
	Dipropylene Glycolmonomethyl Ether	538.40	2	0.00	
	Diethylene Glycol Monomethyl Ether	443.16	2	0.00	0.96
	Stoddard Solvents	221.18		221.18	1.40
	Petroleum Distillate	171.80		171.80	1.30
	Dipropylene Glycol Methyl Ether	142.41	2	0.00	0.94
	Mineral Spirits	121.98		121.98	1.30
	Diethylene Glycol Monoethyl Ether	84.42	2	0.00	0.96
	Methyl Carbitol	59.85		59.85	1.31
	Diethylene Glycol Methyl Ether	58.29	2	0.00	0.96
	Tributoxy Ethyl Phosphate	39.81	2	0.00	1.00
	FF Plasticizer Blend	31.88	2	0.00	1.00
	Diethylene Glycol Butyl Ether	31.18	2	0.00	0.96
	Glycol Ether	30.69	2	0.00	1.00
	Monoethanolamine	26.49		26.49	3.60
	Isopropanol	25.72		25.72	0.54
	Ethylene Glycol N-Butyl Ether	25.66		25.66	0.94
	Diethylene Glycol Monoethyl Ether	14.87	2	0.00	0.96
	Ethylene Glycol	14.32	2	0.00	1.92
	Ethanolamine	12.87		12.87	3.60
	Modified Acrylic Copolymer Emulsion	11.18	2	0.00	1.00
	Diethylene Glycol Ethyl Ether	11.02	2	0.00	0.96
	Methyl Carbitol	10.00		10.00	1.31
	Ethoxydiglycol	9.04	2	0.00	1.00
	Butyl Carbitol	8.24	2	0.00	1.00
	Duraplex II (IIB)	8.08	2	0.00	1.00
	N-Methyl-2-Pyrrolidone	7.89	2	0.00	1.30
	Diethylene Glycol Monomethyl Ether	7.60	2	0.00	1.00
	Diethylene Glycol Ethylether	7.57	2	0.00	
	Terpinol	6.94		6.94	2.00
	Diethylene Glycol Methyl Ether	5.70	2	0.00	0.96
	2-Butoxyethanol	5.58		5.58	0.97
	Isoparaffin	4.89	2	0.00	1.50
	Duraplex II (IIB)	4.54	2	0.00	1.00
	Dibutyl Phthalate	4.51	2	0.00	1.00
	Xylene	4.00		4.00	7.00
	ML-870 or Chem #2	3.91		3.91	1.00
	Dipropylene Glycol Monomethyl Ether	3.91	2	0.00	0.94
	Rhoplex B1604	3.14	2	0.00	1.00
	N-Methyl-2-Pyrrolidone	2.93	2	0.00	1.30
	Tributoxy Ethyl Phosphate	2.76	2	0.00	1.00
	Rhoplex B-924 (IIB)	2.60	2	0.00	1.00
	DE	2.02		2.02	1.40
	Pine Oil	1.94		1.94	1.90
	Diethylene Glycol Monomethyl Ether	1.91	2	0.00	0.96
	Pine Oil	1.64		1.64	1.90
	2-Butoxyethanol	1.43		1.43	0.97
	Light Petroleum Distillate	1.37		1.37	1.50
	Poly Solv De	1.34		1.34	1.40
	Propane	1.20		1.20	0.48
	Toluene	1.20		1.20	2.70
	2-Butoxyethanol	1.18		1.18	0.97
	Dipropylene Glycol	1.08	2	0.00	0.94
	N-Methyl-2-Pyrrolidone	1.06	2	0.00	1.30
	De Light Gravity	1.06		1.06	1.40

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Tons	Value
	Morpholine	1.05		1.05	0.50
	Diacetone Alcohol	1.02		1.02	0.56
	Isobutane/ Propane	1.01		1.01	0.85
	Misc	5.07		5.07	
	Total	5086.04		3331.55	1.26
2503	Dusting aids				
	Soltrol 145	220.37		220.37	1.40
	Isoparaffin	217.81	2	0.00	1.50
	Mineral Oil	186.08	2	0.00	1.40
	Hydrocarbon Propellant	81.24		81.24	0.75
	Hydrocarbon Solvent	59.15		59.15	1.40
	Mineral Spirits	42.37		42.37	1.30
	Butane/Propane	29.73		29.73	0.75
	Isobutane	19.76		19.76	1.21
	Petroleum Distillate	18.22		18.22	1.30
	Naphtha	15.74		15.74	1.05
	Stoddard Solvents	14.43		14.43	1.40
	Unknown	12.18		7.07	
	Kerosene	11.22		11.22	1.30
	Propane	8.05		8.05	0.48
	Straight Run Middle Distillate	8.05		8.05	1.40
	Liquefied Petroleum Gas	6.17		6.17	0.75
	Mineral Spirits	4.88		4.88	1.30
	Isopropanol	2.38		2.38	0.54
	C9-C12 Saturated Hydrocarbons	2.22		2.22	1.14
	450 Solvent	1.73		1.73	1.40
	Technical Mineral Oil	1.04	2	0.00	1.00
	Misc	1.53		1.53	
	Total	964.35		554.31	1.21
2599	Other waxes and polishes				
	Isoparaffin	254.65	2	0.00	1.50
	Ethanolamine	242.21		242.21	3.60
	Unknown	224.94		150.58	
	Naphtha	57.45		57.45	1.05
	Ethanol	51.42		51.42	1.34
	Hydrocarbon Propellant	43.79		43.79	0.75
	Mineral Spirits	23.29		23.29	1.30
	2-Butoxyethanol	21.75		21.75	0.97
	Ethylene Glycol Monobutylether	21.57		21.57	0.97
	Isobutane	18.83		18.83	1.21
	Petroleum Distillate	15.47		15.47	1.30
	Light Petroleum Distillate	5.71		5.71	1.50
	Stoddard Solvents	5.42		5.42	1.40
	Mineral Oil	5.09	2	0.00	1.40
	Kerosene	3.81		3.81	1.30
	Propane	1.62		1.62	0.48
	Sunpar 110	1.52		1.52	1.00
	Isobutane/Propane	1.37		1.37	0.85
	Corvus Oil 00519-13	1.10	2	0.00	1.00
	Fragrance	0.00		21.55	2.00
	Misc	3.56		3.56	
	Total	1004.57		690.92	2.27
	All Waxes and Polishes	14,380		7,916	
Air Fresheners					
2601	Room air fresheners				
	Ethanol	9052.65		9052.65	1.34
	Hydrocarbon Propellant	6567.51		6567.51	0.75
	Unknown	2417.27		0.00	
	Propane	2221.22		2221.22	0.48
	Isobutane	1848.12		1848.12	1.21
	Dipropylene Glycol	1551.00	2	0.00	0.94
	Fragrance	1318.39		1318.39	2.00

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Tons	Value
	PB-70 Propellant	581.01		581.01	0.75
	Isopropanol	337.16		337.16	0.54
	Mineral Spirits	307.93		307.93	1.30
	Fragrance	167.37		3076.77	2.00
	Para-Dichlorobenzene	136.96		136.96	0.06
	Butane	85.82		85.82	1.02
	Butane/Propane	68.43		68.43	0.75
	Perfume	60.87		60.87	2.00
	Isoparaffin	41.80	2	0.00	1.50
	N-Butane	36.02		36.02	1.02
	Isobutane/Propane	32.70		32.70	0.85
	Liquefied Petroleum Gas	28.17		28.17	0.75
	Isopropyl Alcohol	21.65		21.65	0.54
	Isobutane/Propane	18.56		18.56	0.85
	Petroleum Distillate	13.90		13.90	1.30
	Diisopropyl Adipate	12.44	2	0.00	1.00
	Fragrance	12.41		12.41	2.00
	Apple Fragrance	11.65		11.65	2.00
	Methanol	8.51		8.51	0.56
	Propylene Glycol	8.12	2	0.00	1.00
	Fragrance	7.23		7.23	2.00
	Fragrance	6.92		6.92	2.00
	D-Limonene	9.43		9.43	2.00
	Heptane	5.67		5.67	0.81
	Mineral Spirits	4.74		4.74	1.30
	Glycol Ether	4.64	2	0.00	1.00
	Butane/Isobutane	3.94		3.94	1.12
	C3-C4 Alkane Propellant	2.83		2.83	0.75
	Butane/Propane	2.28		2.28	0.75
	Fragrance	2.24		2.24	2.00
	Arylessence L-2798 Spicy Orange	2.02		2.02	2.00
	Arylessence L-3475 Victorian Christmas	1.63		1.63	2.00
	Dimethyl Ether	1.61		1.61	0.56
	Arylessence L-3465 Bayberry	1.44		1.44	2.00
	Triethylene Glycol	1.41	2	0.00	1.00
	Alcohols, C10-C12, Ethoxylated, Propoxylated	1.06	2	0.00	1.00
	Misc	3.47		3.47	
	Total	27030.20		25901.86	1.19
2602	Toilet deodorant blocks				
	Para-Dichlorobenzene	6593.26		6593.26	0.06
	Polyethylene Glycol (55)	90.64	2	0.00	1.00
	1,4-Dichlorobenzene	26.73		26.73	0.06
	Fragrance	22.64		22.64	2.00
	Unknown	5.37		5.37	
	Misc	0.21		0.21	
	Total	6738.85		6648.21	0.07
2699	Other air fresheners				
	Para-Dichlorobenzene	1220.17		1220.17	0.06
	Unknown	332.56		0.00	
	Isopropanol	147.57		147.57	0.54
	Ethanol	76.82		76.82	1.34
	Fragrance	31.69		364.25	2.00
	1,4-Dichlorobenzene	19.44		19.44	0.06
	O-Dichlorobenzene	18.34		18.34	0.06
	BTC-8358 Stephan Company	17.28	2	0.00	1.00
	Kerosene	12.97		12.97	1.30
	Propane	12.34		12.34	0.48
	Ortho Dichlorobenzene	10.36		10.36	0.06
	Petroleum Distillate	9.41		9.41	1.30
	Aliphatic Hydrocarbons	3.80		3.80	1.30
	D-Limonene	3.44		3.44	2.00
	Methanol	3.27		3.27	0.56
	Dimethyl Ether/Liquified Petroleum Gas (Mixture)	2.83		2.83	0.66
	Norville/Nickstadt/Moeller Frag #R-90-W	2.25		2.25	2.00

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported		Adjusted	
		RVOC	Product	RVOC	MIR
		Tons	Code	Tons	Value
	Bubble Gum Perfume	2.01		2.01	2.00
	BTC-8249 Stephan Company	1.60	2	0.00	1.00
	Benzene 1-Chloro-2Methyl;Benzene 1-Chloro-4Methyl	1.10		1.10	0.22
	Isobutane/Propane	1.06		1.06	0.85
	Propylene Glycol	1.03	2	0.00	1.00
	Misc	5.56		5.56	
	Total	1936.90		1916.99	0.55
	All Air Fresheners	35,706		34,467	
Shoe and Leather Care Products					
2701	Leather treatments				
	Mineral Spirits	92.04		92.04	1.30
	Isobutane	4.31		4.31	1.21
	Stoddard Solvents	1.52		1.52	1.40
	Unknown	1.03		1.03	
	Misc	2.61		2.61	
	Total	101.51		101.51	1.30
2703	Shoe polishes				
	Stoddard Solvents	26.85		26.85	1.40
	Unknown	5.70		5.70	
	Xylene	5.53		5.53	7.00
	Isobutane	4.90		4.90	1.21
	Misc	0.35		0.35	
	Total	43.33		43.33	2.21
2799	Other leather care products				
	Ethanol	24.54		24.54	1.34
	Naphtha	14.28		14.28	1.05
	Isobutane	10.64		10.64	1.21
	Propane	9.82		9.82	0.48
	Unknown	9.65		9.65	
	Isopropanol	7.23		7.23	0.54
	Ethyl Acetate	5.67		5.67	0.21
	Hydrocarbon Propellant	1.31		1.31	0.75
	Misc	2.34		2.34	
	Total	85.48		85.48	0.97
	All Shoe & Leather Care	230		230	
Miscellaneous Household Products					
2801	Lubricants ¹				
	Petroleum Distillate	663.10		0.00	1.30
	Mineral Spirits	148.96		0.00	1.30
	Propane	143.45		0.00	0.48
	Unknown	142.23		0.00	
	Isobutane/Propane	140.07		0.00	0.85
	Hexane	86.29		0.00	0.98
	Mineral Oil	73.04	2	0.00	1.40
	Dipropylene Glycol Methyl Ether	63.01	2	0.00	0.94
	Butane	56.38		0.00	1.02
	Hexylene Glycol	47.46	2	0.00	1.54
	Kerosene	41.87		0.00	1.30
	Naphtha	37.96		0.00	1.05
	Perchloroethylene	37.69	1	0.00	0.03
	Fuel Oil	34.14		0.00	6.00
	Mineral Spirits	33.03		0.00	1.30
	Isobutane	26.23		0.00	1.21
	Isopropanol	21.02		0.00	0.54
	Hydrocarbon Propellant	17.65		0.00	0.75
	Lacoline	16.73	2	0.00	1.00
	Ethanolamine	13.90		0.00	3.60
	Isobutane/Propane	13.24		0.00	0.85
	Liquefied Petroleum Gas	7.85		0.00	0.75
	Triethanolamine	7.61	2	0.00	6.30
	Ethyl Acetate	6.47		0.00	0.21

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Tons	Value
	Butane/Propane	4.91		0.00	0.75
	Heptane	3.99		0.00	0.81
	Propylene Glycol	3.62	2	0.00	1.00
	Stoddard Solvents	3.46		0.00	1.40
	Acetone	1.85	1	0.00	0.56
	Misc	6.38		0.00	
	Total	1903.59		0.00	1.46
2802	Drain openers				
	Orange Oil Terpenes	284.86		284.86	2.00
	D-Limonene	42.88		42.88	2.00
	Petroleum Distillate	32.98		32.98	1.30
	Ortho Dichlorobenzene	10.67		10.67	0.06
	Linseed Oil	3.28	2	0.00	1.40
	Naphtha	2.03		2.03	1.05
	Isobutane	1.73		1.73	1.21
	Ethanolamine	1.72		1.72	3.60
	Pine Oil	1.57		1.57	1.90
	Misc	1.64		1.64	
	Total	383.36		380.08	1.88
2803	Charcoal lighters				
	Mineral Spirits	19480.25		19480.25	1.30
	Petroleum Distillate	15270.03		15270.03	1.30
	Mixture of Aliphatic hydrocarbons	486.47		486.47	1.70
	Naphtha	394.90		394.90	1.05
	Mineral Spirits	22.02		22.02	1.30
	Misc	0.00		0.00	
	Total	35653.67		35653.67	1.30
2804	Wick lamp fuels				
	Petroleum Distillate	5510.51		5510.51	1.30
	Hydrocarbon Propellant	231.74		231.74	0.75
	Hydro-Treated Light Distillate Petroleum	123.65		123.65	1.70
	Petroleum Distillate	42.38		42.38	1.30
	Kerosene	34.59		34.59	1.30
	Hexane	10.25		10.25	0.98
	Unknown	9.53		9.53	
	Misc	0.00		0.00	
	Total	5962.65		5962.65	1.29
2805	Plant leaf cleaners and waxes				
	Isopropanol	3.50		3.50	0.54
	Mineral Oil	2.05	2	0.00	1.40
	Misc	2.27		2.27	
	Total	7.82		5.77	0.54
2806	Driveway cleaners				
	Dipropylene Glycol Monomethyl Ether	4.85	2	0.00	0.94
	EMCO Solvent (01-4103)	1.36		1.36	1.40
	Misc	1.41		1.41	
	Total	7.62		2.77	1.40
2899	Other misc. HH products				
	Ethanol	866.88		866.88	1.34
	Naphtha	814.76		814.76	1.05
	Petroleum Distillate	774.49		774.49	1.30
	Isopropanol	752.12		752.12	0.54
	Xylene	333.57		333.57	7.00
	2-Butoxyethanol	243.07		243.07	0.97
	Butane	222.00		222.00	1.02
	Isobutane	208.99		208.99	1.21
	Heptane	208.45		208.45	0.81
	Ethanolamine	170.81		170.81	3.60
	Unknown	103.94		101.77	
	Mineral Spirits	63.37		63.37	1.30
	Ethylene Glycol Monobutylether	60.03		60.03	0.97
	Terpene Hydrocarbons	59.08		59.08	2.00
	Kerosene	54.90		54.90	1.30
	Glycolic Acid	52.83	2	0.00	1.00

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
				Tons	
	Methyl Ethyl Ketone	48.22		48.22	0.75
	Cyclohexane	45.66		45.66	1.28
	Naphtha (Petroleum) Light	39.83		39.83	1.70
	Oleic Acid	29.65	2	0.00	1.00
	Toluene	25.62		25.62	2.70
	Methanol	16.14		16.14	0.56
	Orange Terpenes	15.11		15.11	2.00
	Mineral Oil	12.71	2	0.00	1.40
	Light Petroleum Distillate	12.47		12.47	1.50
	Monoethanolamine 85%	11.97		11.97	3.06
	Methyl Isobutyl Ketone	10.80		10.80	0.85
	Distillates (Petroleum), Hydrotreated Light	8.74		8.74	1.70
	2-Butoxyethanol	8.19		8.19	0.97
	Ethylene Glycol Monobutylether	7.04		7.04	0.97
	Propylene Glycol	6.68	2	0.00	1.00
	Propane	5.91		5.91	0.48
	Ethyl Acetate	5.38		5.38	0.21
	Mineral Spirits	4.50		4.50	1.30
	Octylphenol Ether	4.26	2	0.00	1.00
	Butane/Propane	2.66		2.66	0.75
	Alkylpolyoxyethylene Ester	2.49	2	0.00	1.00
	Acetone	2.39	1	0.00	0.56
	Cyclohexane	1.88		1.88	1.28
	1-Pentanol	1.19		1.19	1.59
	Misc	6.32		6.32	
	Total	5325.10		5211.92	1.56
	All Misc Household Prod	49,244		47,217	
Automotive Aftermarket Products					
Detailing Products					
3101 Waxes, polishes, sealers ¹					
	Petroleum Distillate	899.13		510.05	1.30
	Naphtha	814.95		462.30	1.05
	Stoddard Solvents	498.68		282.89	1.40
	Ethanol	426.31		241.83	1.34
	Kerosene	408.86		231.94	1.30
	Light Petroleum Distillate	302.10		171.37	1.50
	Mineral Spirits	176.03		99.86	1.30
	Unknown	161.33		91.28	
	Shell Solvent 323E6	76.29		43.28	1.40
	Shell Solvent 320	72.67		41.22	1.40
	Shell Solvent 323E6	31.10		17.64	1.40
	Sodium Dichloroisocyanurate	22.38		12.70	1.00
	Shell Solvent 323E6	11.65		6.61	1.40
	Hexane	11.63		6.60	0.98
	Isopropanol	9.89		5.61	0.54
	Isoparaffin	5.26	2	0.00	1.50
	C10-15 Saturated Hydrocarbon	4.01		2.27	1.17
	Dimethyl Cylosilozane Mixture	3.96	1	0.00	-
	Hydrocarbon Propellant	3.17		1.80	0.75
	Naphtha (Petroleum) Heavy	2.25		1.28	0.80
	Mineral Spirits	2.09		1.19	1.30
	Heptane	1.84		1.04	0.81
	Distillates (Petroleum), Hydrotreated Light	1.70		0.96	1.70
	Xylene	1.54		0.87	7.00
	Isobutane	1.24		0.70	1.21
	Glycol Ether	1.23	2	0.00	1.00
	Butane/Propane	1.15		0.65	0.75
	Misc	5.39		3.06	
	Total	3957.83		2239.00	1.28
3102 Vinyl and leather cleaners					
	Mineral Spirits	64.36		64.36	1.30

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Tons	Value
	Isobutane/Propane	26.25		26.25	0.85
	Unknown	22.80		21.58	
	Naphtha	20.77		20.77	1.05
	Isobutane/Propane	8.01		8.01	0.85
	Mineral Spirits	4.58		4.58	1.30
	2-Butoxyethanol	4.46		4.46	0.97
	Isobutane	2.09		2.09	1.21
	Isopropanol	1.23		1.23	0.54
	Petroleum Distillate	1.07		1.07	1.30
	Fragrance	0.00		1.22	2.00
	Misc	1.52		1.52	
	Total	157.14		157.14	1.13
3103	Upholstery fabric cleaners				
	Unknown	185.84		154.02	
	Propylene Glycol	35.57	2	0.00	1.00
	Isobutane	21.02		21.02	1.21
	Petroleum Distillate	16.16		16.16	1.30
	Perchloroethylene	2.50	1	0.00	0.03
	Monoethanolamine	1.09		1.09	3.60
	Fragrance	0.00		5.70	2.00
	Misc	0.32		0.32	
	Total	262.50		198.30	1.40
3104	Tire cleaners				
	Unknown	166.23		165.18	
	Isobutane/Propane	76.30		76.30	0.85
	2-Butoxyethanol	36.14		36.14	0.97
	Ethylene Glycol Monobutylether	32.42		0.00	0.97
	2-Butoxyethanol	21.81		21.81	0.97
	Isopropanol	19.20		19.20	0.54
	Xylene	7.47		7.47	7.00
	Isobutane	5.29		5.29	1.21
	Isobutane	5.09		5.09	1.21
	Naphtha	3.69		3.69	1.05
	2-Propane	2.65		2.65	1.21
	N-Butane	1.48		1.48	1.02
	Glycol Ether	1.39	2	0.00	1.00
	Acetone	1.02	1	0.00	0.56
	Misc	2.41		2.41	
	Total	382.59		346.71	1.14
3105	Wheel cleaners				
	Unknown	132.61		125.32	
	Dipropylene Glycol Methyl Ether	5.88	2	0.00	0.94
	2-Butoxyethanol	3.59		3.59	0.97
	Nonionic Surfactant	2.40	2	0.00	1.00
	Ethylene Glycol Monobutylether	2.01		2.01	0.97
	Isopropanol	1.52		1.52	0.54
	D-Limonene	1.33		1.33	2.00
	Misc	1.37		1.37	
	Total	150.71		135.14	1.05
3106	Bug and tar removers ¹				
	Kerosene	260.73		77.21	1.30
	Stoddard Solvents	145.36		43.04	1.40
	Naphtha	138.92		41.14	1.05
	Petroleum Distillate	99.98		29.61	1.30
	Xylene	70.72		20.94	7.00
	Turpentine	40.58		12.02	1.90
	Mineral Spirits	33.09		9.80	1.30
	Unknown	16.62		4.92	
	Methyl Benzene	8.81		2.61	2.73
	Citrus Distillate	8.28		2.45	2.00
	Isobutane	7.53		2.23	1.21
	Isopropanol	5.88		1.74	0.54
	Ethyl Benzene	5.69		1.68	2.70

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
		Tons		Tons	
	Methyl Naphthalene	4.40		1.30	3.27
	Propane	3.43		1.02	0.48
	2-Butoxyethanol	2.67		0.79	0.97
	Ortho Dichlorobenzene	2.63		0.78	0.06
	Octylphenoxypolyethoxyethanol	1.10	2	0.00	1.00
	Misc	2.47		0.73	
	Total	858.89		254.00	1.81
3107	Chrome cleaners, polishes				
	Kerosene	45.99		45.99	1.30
	Petroleum Distillate	17.59		17.59	1.30
	Hydrocal 60	13.22		13.22	1.70
	Butane/Propane	8.05		8.05	0.75
	Unknown	7.76		7.76	
	Shell Solvent 320	4.73		4.73	1.40
	Stoddard Solvents	4.36		4.36	1.40
	Misc	1.04		1.04	
	Total	102.74		102.74	1.32
3108	Rubber and vinyl protectants				
	Petroleum Distillate	465.18		465.18	1.30
	Stoddard Solvents	156.99		156.99	1.40
	Unknown	137.87		132.40	
	Hexane	133.02		133.02	0.98
	Naphtha	128.33		128.33	1.05
	Mineral Spirits	26.87		26.87	1.30
	C11-12 Isoparaffin	20.13	2	0.00	1.20
	Isobutane	10.35		10.35	1.21
	Propyl Alcohol	8.98		8.98	2.26
	Isobutane/Propane	4.19		4.19	0.85
	Isopropanol	3.22		3.22	0.54
	Propane	2.42		2.42	0.48
	Mineral Spirits	1.39		1.39	1.30
	Fragrance	0.00		3.00	2.00
	Misc	1.86		1.86	
	Total	1100.80		1078.20	1.24
3199	Other detailing products				
	Kerosene	324.56		324.56	1.30
	Naphtha	223.98		223.98	1.05
	Light Petroleum Distillate	213.90		213.90	1.50
	Unknown	167.22		144.59	
	Isopropanol	125.16		125.16	0.54
	Mineral Spirits	121.82		121.82	1.30
	2-Butoxyethanol	98.82		98.82	0.97
	Xylene	94.87		94.87	7.00
	Isobutane	81.27		81.27	1.21
	Toluene	55.22		55.22	2.70
	Stoddard Solvents	24.12		24.12	1.40
	Methyl Ethyl Ketone	23.52		23.52	0.75
	Acetone	17.49	1	0.00	0.56
	Propane	15.14		15.14	0.48
	Petroleum Distillate	14.35		14.35	1.30
	Dodecylbenzene Sulfonic Acid	13.98	2	0.00	1.00
	Methanol	5.12		5.12	0.56
	Alkyl Phenol Ethoxylate	4.70	2	0.00	1.00
	140 Solvent	4.34		4.34	1.40
	Ethanol	4.03		4.03	1.34
	Pale Oil	3.80	2	0.00	1.40
	Alkyl Olefin Sulfonate, Sodium Salt	2.21	2	0.00	1.00
	Butane/Propane/Isobutane	1.60		1.60	0.89
	Turpentine	1.60		1.60	1.90
	Triethanolamine	1.40	2	0.00	6.30
	Perchloroethylene	1.07	1	0.00	0.03
	Fragrance	0.00		18.72	2.00
	Misc	6.93		6.93	
	Total	1652.22		1603.65	1.61

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Tons	Value
	All Auto Detailing Products	8,625		6,115	
	Maintenance and Repair Products				
	3201 Engine degreasers				
	Fuel Oil	6736.83		6736.83	6.00
	Petroleum Distillate	2529.60		2529.60	1.30
	Kerosene	1019.20		1019.20	1.30
	Isobutane	957.04		957.04	1.21
	Naphtha	299.06		299.06	1.05
	Propane	291.72		291.72	0.48
	D-Limonene	249.42		249.42	2.00
	2-Butoxyethanol	240.24		240.24	0.97
	Xylene	164.32		164.32	7.00
	Mineral Spirits	143.30		143.30	1.30
	Methanol	126.42		126.42	0.56
	Perchloroethylene	120.56	1	0.00	0.03
	Unknown	57.28		56.46	
	Ethylene Glycol Monobutylether	50.77		50.77	0.97
	Monochlorotoluene	41.04		41.04	0.22
	Stoddard Solvents	38.99		38.99	1.40
	2-Butoxyethanol	37.70		37.70	0.97
	Dipropylene Glycol Butyl Ether	31.75	2	0.00	0.94
	140 Solvent	30.70		30.70	1.40
	Diethanolamine	19.98		19.98	4.90
	SC 150	17.03		17.03	1.40
	M-Pyrol	15.95	2	0.00	12.72
	9-Octadecenoic Acid (Z) Ammonium Salts	15.70	2	0.00	1.00
	Isobutane	15.37		15.37	1.21
	Isobutane/Propane	11.52		11.52	0.85
	Safety Solvent 200	9.23		9.23	1.40
	Han Solvent	8.92		8.92	1.40
	Neutral Base Oil 100	8.10		8.10	1.40
	Naphtha (Petroleum) Heavy	6.89		6.89	0.80
	Toluene	5.85		5.85	2.70
	Butane/Propane/Isobutane	5.84		5.84	0.89
	Safety Solvent	5.83		5.83	1.40
	Light Petroleum Distillate	5.31		5.31	1.50
	4-Methyl-2-Pentanol	5.23		5.23	1.59
	Pine Oil	4.61		4.61	1.90
	Ethanol	3.45		3.45	1.34
	Glycol Ether	3.41	2	0.00	1.00
	Mineral Spirits	3.29		3.29	1.30
	Xylo	2.75		2.75	1.13
	Ortho Dichlorobenzene	2.49		2.49	0.06
	Isopropanol	2.49		2.49	0.54
	2-Butoxyethanol	2.15		2.15	0.97
	Cyclohexanol	1.96	2	0.00	1.00
	Citrus Terpenes	1.74		1.74	2.00
	Terpene Alcohols	1.45		1.45	1.90
	Lanasol 100	1.38		1.38	1.40
	Isobutane/Propane	1.30		1.30	0.85
	Alkanolamide	1.23	2	0.00	1.00
	Naphtha	1.10		1.10	1.05
	Diethylene Glycol	1.00	2	0.00	0.96
	Misc	5.48		5.48	
	Total	13363.97		13171.59	3.76
	3202 Carburetor, choke cleaners				
	Toluene	2152.25		2152.25	2.70
	Petroleum Distillate	1631.30		1631.30	1.30
	Methanol	1520.26		1520.26	0.56
	Propane	1077.23		1077.23	0.48
	Xylene	920.57		920.57	7.00
	Acetone	894.19	1	0.00	0.56

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory
Speciation of Product Categories
1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
				Tons	
		450.00		450.00	0.99
	Ketone	380.27	1	0.00	0.56
	Acetone	314.78		314.78	0.54
	Isopropanol	271.52		271.52	0.75
	Methyl Ethyl Ketone	249.93		249.93	1.05
	Naphtha	241.61		241.61	1.30
	Mineral Spirits	233.69	2	0.00	1.00
	Glycol Ether	213.70	1	0.00	0.03
	Perchloroethylene	111.77		94.14	
	Unknown	87.37		87.37	7.00
	Xylene	70.66		70.66	0.85
	Isobutane/Propane	47.98		47.98	0.22
	O-Chlorotoluene	43.67		43.67	0.56
	Diacetone Alcohol	31.46		31.46	2.70
	Toluene	26.91		26.91	1.21
	Isobutane	22.55	2	0.00	1.00
	Butyl Carbitol	19.62		19.62	2.70
	Toluene	18.36		18.36	6.00
	Trimethyl Benzene	17.81		17.81	1.70
	Naphtha (Petroleum) Light	17.59		17.59	0.97
	2-Butoxyethanol	15.63		15.63	1.18
	2-Butanone	15.54		15.54	1.21
	2-Propane	14.32		14.32	1.30
	Kerosene	13.35		13.35	0.97
	Ethylene Glycol Monobutylether	10.21	1	0.00	0.03
	Perchloroethylene	7.39		7.39	0.85
	Methyl Isobutyl Ketone	6.30		6.30	1.13
	Xylol	5.50		5.50	2.73
	Methyl Benzene	4.38	2	0.00	1.00
	9-Octadecenoic Acid (Z) Ammonium Salts	4.18		4.18	0.85
	Isobutane/Propane	4.14		4.14	2.00
	Choke and Carb Cleaner	3.29		3.29	0.97
	2-Butoxyethanol	2.83	2	0.00	2.31
	Cresol	2.24		2.24	0.97
	2-Butoxyethanol	2.14		2.14	0.75
	Butane/Propane	1.82	1	0.00	0.02
	Methylene Chloride	1.70	2	0.00	1.00
	Cresylic Acid	1.46		1.46	1.59
	4-Methyl-2-Pentanol	1.18		1.18	2.69
	N-Butyl Alcohol	1.11		1.11	0.42
	Benzene	8.91		8.91	
	Misc				
	Total	11194.67		9411.70	1.97
3203	Brake cleaners	2467.23	1	0.00	0.03
	Perchloroethylene	278.94		278.94	2.70
	Toluene	238.02		238.02	1.30
	Mineral Spirits	205.48		56.26	
	Unknown	115.50		115.50	0.56
	Methanol	83.66	1	0.00	0.03
	Perchloroethylene	75.33	1	0.00	0.03
	Tetrachloroethylene	65.02	1	0.00	0.03
	Tetrachloroethylene	31.93		31.93	0.81
	Heptane	31.42	1	0.00	0.03
	Trichloroethylene	31.10		31.10	1.40
	Textile Spirits	27.41		27.41	0.98
	Hexane	23.64		23.64	0.48
	Propane	21.83	1	0.00	0.56
	Acetone	21.71		21.71	1.40
	Isohexane	18.02		18.02	7.00
	Xylene	9.95		9.95	1.30
	Petroleum Distillate	9.54		9.54	0.56
	Diacetone Alcohol	9.41		9.41	0.54
	Isopropanol	4.24		4.24	0.03
	Chloroform	1.01		1.01	1.92
	IsoN-N-Butyl Alcohol				

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	Inventory	MIR
		Tons	Code	Tons	Value
	Misc	8.91		8.91	
	Total	3779.30		885.59	1.73
3204	Brake anti-squeal compounds				
	Isopropanol	6.08		6.08	0.54
	Acetone	3.54	1	0.00	0.56
	Unknown	3.28		2.64	
	Isobutane/Propane	3.04		3.04	0.85
	Propane	1.02		1.02	0.48
	Misc	1.09		1.09	
	Total	18.05		13.87	0.63
3205	Tire sealants and inflators				
	Isobutane	2033.29		2033.29	1.21
	Propane	868.74		868.74	0.48
	Butane/Propane	197.86		197.86	0.75
	Isobutane/Propane	136.66		136.66	0.85
	Ethylene Glycol	82.34	2	0.00	1.92
	Propylene Glycol	33.37	2	0.00	1.00
	N-Butane	14.91		14.91	1.02
	Butane	6.15		6.15	1.02
	Unknown	2.66		2.57	
	Misc	0.45		0.45	
	Total	3376.43		3260.63	0.97
3206	Belt dressings				
	Toluene	10.18		10.18	2.70
	Acetone	8.27	1	0.00	0.56
	Naphtha	7.95		7.95	1.05
	Propane	7.27		7.27	0.48
	Heptane	7.14		7.14	0.81
	Isobutane	6.58		6.58	1.21
	Hexane	2.18		2.18	0.98
	Mineral Spirits	1.07		1.07	1.30
	Misc	3.85		3.85	
	Total	54.49		46.22	1.34
3207	Engine starting fluids				
	Heptane	2102.84		2102.84	0.81
	Diethyl Ether	754.75		754.75	2.66
	Diethylether	445.68		445.68	2.66
	N-Heptane	269.87		269.87	0.81
	Ether	153.87		153.87	1.00
	Propane	140.49		140.49	0.48
	Ethyl Ether	110.77		110.77	2.66
	Hexane	44.86		44.86	0.98
	Methanol	28.54		28.54	0.56
	Kerosene	24.18		24.18	1.30
	Unknown	21.69		21.69	
	Misc	1.49		1.49	
	Total	4099.03		4099.03	1.40
3208	Lubricants (exc engine oil)¹				
	Petroleum Distillate	9415.41		9268.80	1.30
	Hydrocarbon Propellant	3457.43		3403.59	0.75
	Hydrotreated Light Naphtha Distillate	1482.64		1459.55	1.70
	Kerosene	1190.64		1172.10	1.30
	Mineral Spirits	409.66		403.28	1.30
	Stoddard Solvents	221.52		218.07	1.40
	Hexane	210.62		207.34	0.98
	Unknown	154.48		150.77	
	Propane	146.67		144.39	0.48
	Isobutane	134.83		132.73	1.21
	Napthenic Oil	133.96		131.87	0.80
	Isopropanol	95.13		93.65	0.54
	Heptane	76.35		75.16	0.81
	Mineral Oil	69.74	2	0.00	1.40
	Isohexane	54.86		54.01	1.40

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
				RVOC	MIR
		RVOC	RVOC	Inventory	Value
		Tons	Code	Tons	
	Ethanolamine	37.83		37.24	3.60
	Hexylene Glycol	36.20	2	0.00	1.54
	Petroleum Hydrocarbon Oil	34.87		34.33	1.30
	Butane/Propane/Isobutane	27.83		27.40	0.89
	Med. Aliphatic Hydrocarbon Solvent	26.21		25.80	1.30
	Paraffinic Petroleum Solvent	23.24		22.88	1.50
	Solvent Refined Light Paraffinic Distillate	19.44		19.14	1.40
	Dimethyl Ether	18.14		17.86	0.56
	Liquefied Petroleum Gas	18.06		17.78	0.75
	Aliphatic Hydrocarbons	17.91		17.63	1.30
	Mineral Spirits	15.72		15.48	1.30
	Naphtha	14.34		14.12	1.05
	Perchloroethylene	13.70	1	0.00	0.03
	Cyclohexanone	13.61		13.40	0.87
	Ethylene Glycol	12.03	2	0.00	1.92
	Fuel Oil	11.20		11.03	6.00
	Perchloroethylene	9.06	1	0.00	0.03
	2-Butoxyethanol	8.58		8.45	0.97
	Petroleum Hydrocarbon 989903319	8.23		8.10	1.30
	Propanol	5.21		5.13	2.26
	Acetone	5.03	1	0.00	0.56
	Oxygenated Hydrocarbon Additive	4.65		4.58	0.62
	Shell 140 Solvent	4.34		4.27	1.40
	Methanol	3.60		3.54	0.56
	Isobutane/Propane	3.55		3.49	0.85
	Lubricating Oil	3.51		3.46	1.40
	Isobutane/Propane	3.36		3.31	0.85
	Aeron A-46	3.34		3.29	0.75
	Medium Aliphatic Naphtha Solvent	3.16		3.11	1.30
	Butane/Propane	2.96		2.91	0.75
	Hydrotreated Light Naphtha Distillate	2.33		2.29	1.70
	Xylene	2.24		2.21	7.00
	Anti Oxidant 989944874	2.18	2	0.00	1.00
	Remula 30	1.85		1.82	1.00
	140 Solvent	1.84		1.81	1.40
	12-Hydroxy-Octadecanoic Acid Monolithium Salt	1.77	2	0.00	1.00
	Technical Mineral Oil	1.23	2	0.00	1.00
	Short Range Mineral Spirits	1.22		1.20	1.40
	Naphthenic Acid Lead Salt	1.18	2	0.00	1.00
	Naphtha (Petroleum) Heavy	1.09		1.07	0.80
	Sweetened Liquefied Gas	1.04		1.02	0.75
	Chlorodifluoromethane	1.00		0.98	0.03
	Misc	12.77		12.57	
	Total	17694.59		17268.00	1.21
3209	Antifreezes ¹				
	Ethylene Glycol	9677.19	2	0.00	1.92
	Ethylene Glycol	3680.14	2	0.00	1.92
	Methanol	2078.27		0.00	0.56
	Propylene Glycol	1119.96	2	0.00	1.00
	Isopropanol	463.13		0.00	0.54
	Unknown	199.11		0.00	
	Ethanol	95.05		0.00	1.34
	Dye 989915934	58.68	2	0.00	1.00
	Monoethanolamine	15.65		0.00	3.60
	Misc	1.16		0.00	
	Total	17388.34		0.00	1.46
3210	Brake fluids				
	Diethylene Glycol	2476.13	2	0.00	0.96
	Glycol Ether	2471.11	2	0.00	1.00
	Diethylene Glycol Butyl Ether	156.67	2	0.00	0.96
	Diethylene Glycol Ethyl Ether	134.29	2	0.00	0.96
	Diethylene Glycol Methyl Ether	44.76	2	0.00	0.96
	Polyethylene Glycol	44.76	2	0.00	1.00

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory
Specification of Product Categories
1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
		Tons		Tons	
	Triethylene Glycol Monobutyl Ether	30.74	2	0.00	1.00
	Methanol	29.47		29.47	0.56
	Pentaethylene Glycol	22.38	2	0.00	1.00
	Tetraethylene Glycol	22.38	2	0.00	1.00
	Triethylene Glycol	22.38	2	0.00	1.00
	Diethylene Glycol Monobutyl Ether	13.17	2	0.00	0.96
	Misc	0.00		0.00	
	Total	5468.24		29.47	0.56
3211	Body repair (exc coatings)				
	Styrene	1015.16	2	0.00	2.20
	Reichhold #32-366 Polyester Resin	644.02	2	0.00	1.00
	Beckosol - Reichhold Chemicals	250.80		250.80	1.40
	Acetone	159.86	1	0.00	0.56
	Aristech Unsaturated Polyester Resin #C2003G	115.26	2	0.00	1.00
	Reichhold #32-380-00 Polyite Resin	62.30	2	0.00	1.00
	Toluene	18.03		18.03	2.70
	Toluene	11.96		11.96	2.70
	N-Butyl Acetate	9.68		9.68	0.67
	Styrene Monomer	7.36	2	0.00	2.20
	Unknown	6.26		1.27	
	Unsaturated Polyester Resin	5.52	2	0.00	1.00
	Xylene	4.15		4.15	7.00
	Methyl Ethyl Ketone	3.48		3.48	0.75
	Petroleum Distillate	2.89		2.89	1.30
	Naphtha	1.75		1.75	1.05
	Isopropanol	1.40		1.40	0.54
	Misc	2.37		2.37	
	Total	2322.25		307.78	1.57
3212	Windshield deicers ¹				
	Methanol	1854.47		913.29	0.56
	Isopropanol	171.50		84.46	0.54
	Ethylene Glycol	56.33	2	0.00	1.92
	Unknown	2.32		1.11	
	Propane	1.18		0.58	0.48
	Misc	1.13		0.56	
	Total	2086.93		1000.00	0.56
3213	Windshield washer fluids				
	Methanol	44252.27		44252.27	0.56
	Unknown	1215.67		1215.67	
	Ethylene Glycol Monomethyl Ether	4.11		4.11	0.97
	Isopropanol	3.84		3.84	0.54
	Misc	1.10		1.10	
	Total	45476.99		45476.99	0.56
3299	Other repair products				
	Stoddard Solvents	23008.42		23008.42	1.40
	Methanol	2720.66		2720.66	0.56
	Fuel Oil	1819.97		1819.97	6.00
	Petroleum Distillate	1611.23		1611.23	1.30
	Isopropanol	1414.59		1414.59	0.54
	Toluene	1354.30		1354.30	2.70
	Naphtha	1318.98		1318.98	1.05
	Unknown	934.62		897.57	
	Acetone	827.66	1	0.00	0.56
	Kerosene	791.10		791.10	1.30
	Xylene	668.88		668.88	7.00
	Mineral Spirits	528.56		528.56	1.30
	2-Butoxyethanol	337.14		337.14	0.97
	Light Petroleum Distillate	265.95		265.95	1.50
	Ethylene Glycol Monobutylether	257.29		257.29	0.97
	Monochlorotoluene	226.29		226.29	0.22
	Hydrotreated Light Naphtha Distillate	200.20		200.20	1.70
	Methyl Ethyl Ketone	175.41		175.41	0.75
	Butyl Carbitol	173.12	2	0.00	1.00

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

	Reported	Product	Adjusted	
	RVOC	RVOC	RVOC	MIR
	Tons	Code	Tons	Value
Isobutyl Acetate	154.48		154.48	1.10
EEP Solvent	154.48		0.00	1.40
Castor Oil	117.44	2	0.00	1.00
Methyl Isobutyl Ketone	93.16		93.16	0.85
Propane	79.93		79.93	0.48
Cresylic Acid	72.33	2	0.00	1.00
M-Pyrol	65.31	2	0.00	12.72
2-Ethylhexyl Nitrate	63.65	2	0.00	1.00
Ethylene Glycol	55.63	2	0.00	1.92
Xylol	46.58		46.58	1.13
2-Butoxyethanol	44.63		44.63	0.97
Isobutane	37.48		37.48	1.21
Methylcyclopentadienyl Manganese Tricarbonyl	35.56	2	0.00	1.00
Aeron A-46	34.61		34.61	0.75
Dimethyl Siloxane	33.40	1	0.00	-
Ethyl Acetate	31.94		31.94	0.21
Cottonseed Oil (Gossypium Hirsutum)	28.67	2	0.00	1.00
1-Butoxypropanol	27.10		27.10	0.97
Toluene	23.36		23.36	2.70
Methyl Isobutyl Carbinol	22.11		22.11	1.31
9-Octadecenoic Acid (Z) Ammonium Salts	20.17	2	0.00	1.00
Chlorinated Paraffin	20.13	2	0.00	0.78
Butane/Propane/Isobutane	19.53		19.53	0.89
Sweetened Liquified Gas	19.15		19.15	0.75
Heptane	17.34		17.34	0.81
Hexane	17.13		17.13	0.98
Naptherie Distillate	13.89		13.89	1.70
Isobutane/Propane	13.24		13.24	0.85
Lactol Spirits	11.91		11.91	1.00
Diethylene Glycol Butyl Ether	11.63	2	0.00	0.96
Lubrizol	10.44	2	0.00	1.40
Methyl Naphthalene	10.24		10.24	3.27
Ethylene Glycol Monobutyl Ether	9.80		9.80	0.97
Isobutane/Propane	9.45		9.45	0.85
Pine Terpene Alcohol	9.42		9.42	2.00
Phenol Isopropylated, Phosphate	9.07	2	0.00	1.00
Cyclohexane	8.76		8.76	1.28
140 Solvent	8.46		8.46	1.40
Methoxyisopropanol	7.99		0.00	2.04
Triethylene Glycol Monobutyl Ether	7.77	2	0.00	1.00
4-Methyl-2-Pentanol	6.38		6.38	1.59
Lubrizol	3.18	2	0.00	1.40
Dimethyl Phenol Phosphate	5.72	2	0.00	1.00
Propylene Glycol	5.66	2	0.00	1.00
Ethylene Glycol Methyl Ether	5.58		5.58	0.97
Cyclohexanone	5.01		5.01	0.87
Dodecylbenzene Sulfonic Acid	4.94	2	0.00	1.00
Citric Acid Anhydrous	3.71	2	0.00	1.00
Lubrizol	3.55	2	0.00	1.40
Tetrachloroethylene	3.34	1	0.00	0.03
Ethyl Benzene	2.86		2.86	2.70
Monoisopropylamide	2.74		2.74	1.00
OFA-436	2.66		2.66	0.75
Perchloroethylene	2.65	1	0.00	0.03
Asphalt	2.44	2	0.00	6.00
Diluent Oil 989972127	2.21		2.21	1.40
Solvent Refined Light Naphthenic Distillate	2.21		2.21	1.40
MTBE	2.12		2.12	0.62
Methyl Oxitol	1.85		1.85	1.00
Paraffin	1.78	2	0.00	1.50
Triphenol Phosphate	1.60	2	0.00	1.00
Ethyl 3Ethoxypropionate	1.52	2	0.00	1.00
IsoN-N-Butyl Alcohol	1.50		1.50	1.92
2-Butanone	1.48		1.48	1.18

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
				Tons	
	Proprietary Fuel Additive	1.31		1.31	1.00
	Diacetone Alcohol	1.29		1.29	0.56
	Oxygenated Hydrocarbon Additive	1.14		1.14	0.62
	Mineral Spirits	1.06		1.06	1.30
	Alkyl Phenol Ethoxylate	1.02	2	0.00	1.00
	Poly Butane	1.00	2	0.00	1.00
	Misc	13.67		13.67	
	Total	40208.92		38415.31	1.63
	All Auto Maint/Rep Prod	166,532		133,386	
Miscellaneous Products (not otherwise covered)					
Arts and Crafts Supplies					
7101	Artists paints, thinners				
	Heptane	401.50		401.50	0.81
	Mineral Spirits	72.48		72.48	1.30
	Naphtha	57.74		57.74	1.05
	Mineral Spirits	23.30		23.30	1.30
	Isopropanol	8.85		8.85	0.54
	Propylene Glycol	7.08	2	0.00	1.00
	Unknown	6.30		6.18	
	Light Petroleum Distillate	5.45		5.45	1.50
	Foamcoat, Pierce & Stevens	2.09	2	0.00	1.00
	Paraplex WP 1 - Rohm & Haas	2.07	2	0.00	1.00
	Misc	1.94		1.94	
	Total	588.80		577.44	0.92
7102	Fixative sprays				
	Acetone	57.78	1	0.00	0.56
	Isobutane	8.95		8.95	1.21
	Propane	8.95		8.95	0.48
	Glycol Ether Acetate	4.55		4.55	1.00
	Naphtha	4.29		4.29	1.05
	Unknown	1.75		0.59	
	Misc	1.26		1.26	
	Total	87.53		28.59	0.90
7103	Specialty cleaning products				
	D-Limonene	311.10		311.10	2.00
	Mineral Spirits	198.04		198.04	1.30
	Petroleum Distillate	75.75		75.75	1.30
	Kerosene	13.62		13.62	1.30
	Isobutane	11.37		11.37	1.21
	Mineral Spirits	8.00		8.00	1.30
	Naphtha	8.00		8.00	1.05
	2-Butoxyethanol	5.15		5.15	0.97
	Unknown	3.81		3.78	
	propane	2.95		2.95	0.48
	Ethanolamine	2.41		2.41	3.60
	N-Butoxypropanol	1.84		1.84	2.04
	N-Methyl-2-Pyrrolidone	1.65	2	0.00	1.30
	N-Methyl-2-Pyrrolidone	1.47	2	0.00	1.30
	Dipropylene Glycol Methyl Ether	1.35	2	0.00	0.94
	Isopropanol	1.15		1.15	0.54
	Misc	2.07		2.07	
	Total	649.73		645.23	1.64
7104	Ceramic finishing products				
	Methoxyisopropanol Acetate	15.90		15.90	1.34
	Ethylene Glycol	1.63	2	0.00	1.92
	Misc	2.95		2.95	
	Total	20.48		18.85	1.34
7199	Other arts and crafts supplies				
	L.P. Gas Propellant	112.61		112.61	0.75
	Perchloroethylene	84.05	1	0.00	0.03
	Naphtha	79.37		79.37	1.05

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory

Speciation of Product Categories

1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Tons	Value
	Unknown	58.20		46.18	
	Mineral Spirits	57.71		57.71	1.30
	Lacquer Diluent	43.97		43.97	1.30
	Butane/Propane	42.68		42.68	0.75
	Acetone	24.67	1	0.00	0.56
	Ethanol	8.81		8.81	1.34
	Isobutane/Propane	5.39		5.39	0.85
	N-Butane	4.59		4.59	1.02
	Isopropanol	1.76		1.76	0.54
	Propane	1.03		1.03	0.48
	Misc	1.37		1.37	
	Total	526.21		405.47	0.99
	All Arts & Crafts Supplies	1,873		1,676	
	Non-Pesticidal Veterinary and Pet Products				
	7201 Animal drugs (external only)				
	Acetone	141.79	1	0.00	0.56
	Isopropanol	80.90		80.90	0.54
	Glycerine	14.51	2	0.00	1.00
	Glycerol	13.57	2	0.00	1.00
	Dimethyl Sulfoxide	11.20	2	0.00	1.00
	Propylene Glycol	7.90	2	0.00	1.00
	Steam Distilled Wood Turpentine	7.42		7.42	1.90
	Ethanol	7.29		7.29	1.34
	Dipropylene Glycol Methyl Ether	7.15	2	0.00	0.94
	Unknown	6.34		2.22	
	Oil Hemlock, Synthetic	1.13		1.13	1.40
	Misc	2.69		2.69	
	Total	301.89		101.65	0.71
	7202 Animal grooming products				
	Ethanol	56.89		56.89	1.34
	Isobutane	42.42		42.42	1.21
	Propane	11.32		11.32	0.48
	Unknown	7.76		5.61	
	Mineral Oil	5.55	2	0.00	1.40
	N-Butane	5.09		5.09	1.02
	Sodium Lauryl Sulfate	3.92	2	0.00	1.00
	Stepanol AEM (Shampoo Blended with Ethyl Alcohol)	2.16		2.16	1.34
	Turpentine	1.56		1.56	1.90
	Glycerine	1.42	2	0.00	1.00
	Propylene Glycol	1.18	2	0.00	1.00
	Fragrance	0.00		1.62	2.00
	Misc	0.92		0.92	
	Total	140.19		127.59	1.22
	7203 Cat litters				
	Unknown	262.50		0.00	
	Fragrance	0.00		262.50	2.00
	Misc	0.00		0.00	
	Total	262.50		262.50	2.00
	7299 Other vet and pet products				
	Dipropylene Glycol Methyl Ether	403.39	2	0.00	0.94
	Propylene Glycol	19.95	2	0.00	1.00
	Ethanol	19.32		19.32	1.34
	Blandol	14.11	2	0.00	1.00
	Fenthion	12.48	2	0.00	1.00
	Orvus K Liquid	4.59	2	0.00	1.00
	Isopropanol	4.44		4.44	0.54
	Unknown	4.00		0.29	
	Mineral Oil	2.99	2	0.00	1.40
	N-Butane	2.03		2.03	1.02
	Propane	2.02		2.02	0.48
	Clean Front Concentrate	1.91		1.91	2.00
	Dimethyl Sulfoxide	1.48	2	0.00	1.00

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory
Specification of Product Categories
1990

		Reported	Product	Adjusted	
		RVOC	RVOC	RVOC	MIR
		Tons	Code	Inventory	Value
				Tons	
	Isobutane	1.35		1.35	1.21
	Sorbitol 70% Solution	1.19	2	0.00	1.00
	Corn Oil	1.16	2	0.00	1.00
	Polyethylene Glycol 400	1.00	2	0.00	1.00
	Misc	0.82		0.82	
	Total	498.23		32.18	1.18
	All Pet/Vet Products	1,203		524	
Pressurized Food Products					
7302	Pan sprays				
	Isobutane	1133.70		1133.70	1.21
	Ethanol	748.60		748.60	1.34
	Propane	228.87		228.87	0.48
	Isobutane/Propane	168.75		168.75	0.85
	Butane	111.76		111.76	1.02
	Unknown	104.61		104.61	
	Hydrocarbon Propellant	54.90		54.90	0.75
	Isobutane/Propane	25.93		25.93	0.85
	N-Butane	6.77		6.77	1.02
	Misc	0.94		0.94	
	Total	2584.83		2584.83	1.13
7303	Whipped dessert toppings				
	Unknown	0.00		0.00	
	Misc	0.00		0.00	
	Total	0.00		0.00	1.46
7399	Other pressurized products				
	Isobutane	0.04		0.04	1.21
	Unknown	0.00		0.00	
	Misc	0.00		0.00	
	Total	0.04		0.04	1.21
	All Pressurized Food Prod			2,585	
Office Supplies					
7401	Pens				
	Unknown	0.00		0.00	
	Misc	0.00		0.00	
	Total	0.00		0.00	1.46
7402	Ink				
	Ethylene Glycol	2.91	2	0.00	1.92
	Misc	2.18		2.18	
	Total	5.09		2.18	1.46
7403	Permanent markers				
	Xylene	13.22		13.22	7.00
	Misc	0.99		0.99	
	Total	14.21		14.21	7.00
7404	Dry erasable markers				
7405	Highlighters	0.00			
7406	Correction fluids	0.00			
7408	Inked ribbons	0.00			
7499	Other office supplies				
	Methanol	570.70		570.70	0.56
	Ethanol	92.86		92.86	1.34
	Isobutane	17.89		17.89	1.21
	Unknown	10.49		10.49	
	Propylene Glycol	10.19	2	0.00	1.00
	Misc	0.04		0.04	
	Total	702.17		691.98	0.68
	All Office Supplies	721		708	
All Surveyed Categories					
Notes:					
Emissions in these product categories were adjusted to reflect the CARB 1995 survey. The distribution of					

Attachment B - CSPA Comments on ARB Agenda Item # 13-2-2

Consumer Products RVOC Emissions Inventory
Speciation of Product Categories
1990

			Adjusted		
			Reported	Product	MIR
			RVOC	RVOC	Value
			Tons	Code	Tons
species in each category was determined using the same breakdown as reported in the category.					
Emissions were back-calculated from 1995 to 1990.					