State of California
AIR RESOURCES BOARD

Resolution 00-35

October 26, 2000

Agenda Item No.: 00-10-2

WHEREAS, sections 39600 and 39601 of the Health and Safety Code authorize the Air Resources Board (ARB or Board) to adopt standards, rules and regulations and to do such acts as may be necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, section 41712 of the Health and Safety Code directs the Board to adopt regulations to achieve the maximum feasible reduction in volatile organic compounds (VOC) emitted by consumer products, if the Board determines that adequate data exist for it to adopt the regulations, and if the regulations are technologically and commercially feasible and necessary;

WHEREAS, pursuant to section 41712 of the Health and Safety Code, on November 8, 1989, the Board approved the Regulation for Reducing Volatile Organic Compound Emissions from Antiperspirants and Deodorants (title 17, California Code of Regulations (CCR), sections 94500-94506.5; the "Antiperspirant and Deodorant Regulation");

WHEREAS, the Antiperspirant and Deodorant Regulation established standards for antiperspirants and deodorants, including a zero percent high volatility organic compound (HVOC) limit for aerosol antiperspirants which had an effective date of January 1, 1995;

WHEREAS, the Antiperspirant and Deodorant Regulation allowed each manufacturer the option of delaying compliance with the zero percent HVOC limit until January 1, 1999, if the manufacturer submitted a "compliance plan" documenting their efforts to develop complying aerosol products;

WHEREAS, on November 15, 1994, the Board adopted the California State Implementation Plan for Ozone (SIP) to satisfy the requirements of the federal Clean Air Act;

WHEREAS, on February 14, 1995, the Antiperspirant and Deodorant Regulation was approved by the United States Environmental Protection Agency (U.S. EPA) as a component of the SIP;
WHEREAS, at a September 28, 1995, public hearing, the Board approved amendments to the Antiperspirant and Deodorant Regulation which, among other things, established interim limits of 40 percent HVOC for aerosol antiperspirants and 14 percent HVOC for aerosol deodorants; these limits became effective on January 1, 1997, and applied only to manufacturers operating under approved compliance plans;

WHEREAS, at a June 26, 1997, public hearing, staff reported to the Board that aerosol manufacturers were making satisfactory progress toward complying with the zero percent HVOC limit;

WHEREAS, during further development of zero percent HVOC aerosol antiperspirants, manufacturers discovered a technical problem that was causing unstable formulations and can corrosion;

WHEREAS, through further research it was discovered that a chemical reaction was occurring between hydrofluorocarbon-152a (HFC-152a) and aluminum chlorohydrate which led to the formation of acetaldehyde, a chemical identified as a Toxic Air Contaminant by the ARB pursuant to sections 39660-39662 of the Health and Safety Code;

WHEREAS, to provide time to research and overcome the technical problem, in 1998 five aerosol antiperspirant manufacturers applied for and were granted variances from compliance with the zero percent HVOC limit; these variances will expire on January 1, 2001;

WHEREAS, despite considerable research, no manufacturer has been able to successfully formulate a zero percent HVOC aerosol antiperspirant, and such products are not currently being sold in California;

WHEREAS, the proposed amendments to the Antiperspirant and Deodorant Regulation would repeal the zero percent HVOC limit and reinstate the 40 percent HVOC limit for aerosol antiperspirants, effective January 1, 2001;

WHEREAS, the proposed amendments to the Antiperspirant and Deodorant Regulation also clarify certain regulatory provisions, streamline reporting requirements, and modify the type of formulation information that manufacturers must report to the ARB;

WHEREAS, the California Environmental Quality Act (CEQA) and Board regulations require that no project that may have significant adverse environmental impacts be adopted as originally proposed if feasible alternatives or mitigation measures are available to reduce or eliminate such impacts;
WHEREAS, a public hearing and other administrative proceedings have been held in accordance with the provisions of Chapter 3.5 (commencing with section 11340), Part 1, Division 3, Title 2 of the Government Code;

WHEREAS, the Board staff has consulted with the U.S. EPA regarding consumer product regulations promulgated by other state and local governments as provided in section 183(e) of the federal Clean Air Act;

WHEREAS, the Board finds that:

A chemical reaction takes place between HFC-152a and aluminum chlorohydrate in aerosol antiperspirants, which leads to the formation of acetaldehyde, a chemical identified by the ARB as a Toxic Air Contaminant;

At present, HFC-152a is the only non-VOC propellant available to achieve the zero percent HVOC limit, and aluminum chlorohydrate is the only active ingredient approved by the United States Food and Drug Administration for use in aerosol antiperspirants;

Aerosol antiperspirants in which this chemical reaction occurs are not technologically and commercially feasible;

Manufacturers have made diligent efforts and have explored all feasible avenues to develop zero percent HVOC aerosol antiperspirants, but have not been able to overcome the technical problems identified above;

Eliminating the zero percent HVOC limit is necessary to ensure that technologically and commercially feasible aerosol antiperspirants continue to be available to California consumers;

Based on current information, an HVOC limit of 40 percent is presently the lowest HVOC limit for aerosol antiperspirants that is technologically and commercially feasible;

The amendments to the HVOC limit are necessary to prevent the elimination of the aerosol product form for antiperspirants;

The amendments will result in an increase in VOC emissions, and a SIP shortfall, of about 1 ton per day statewide in 2001 and 1.3 tons per day statewide in 2010;

The SIP shortfall created by the increase in VOC emissions will be addressed in 2001 when ARB staff completes a comprehensive revision of the State's long-range strategy for achieving the health based ambient air quality standards;
Other proposed amendments to the Antiperspirant and Deodorant Regulation will clarify certain provisions and streamline the reporting requirements, while still allowing staff to monitor technological advances to determine if further VOC reductions are feasible in the future;

The amendments to the consumer products regulation are authorized by California law and satisfy the requirements of section 41712 of the Health and Safety Code;

There exists adequate data to support the adoption of the amendments and to establish that the amendments are necessary, and are commercially and technologically feasible;

The economic impacts of the amendments have been analyzed as required by California law, and the conclusions and supporting documentation for this analysis are set forth in the Initial Statement of Reasons;

The proposed amendments should have an overall positive economic impact and result in cost savings for all antiperspirant and deodorant manufacturers; and

The reporting requirements of the amendments which apply to businesses are necessary for the health, safety, and welfare of the people of the State; and

WHEREAS, pursuant to the requirements of the California Environmental Quality Act and the Board’s regulations, the Board further finds that:

Increasing the HVOC limit for aerosol antiperspirants from zero percent to 40 percent will result in an increase of about 1 ton per day of VOC emissions statewide in 2001 (and an increase of 1.3 tons per day statewide in 2010), as compared to the emission reductions that would be achieved from implementing the zero percent HVOC limit;

These excess VOC emissions will result in an adverse environmental impact on ground level ozone concentrations;

Increasing the HVOC limit to 40 percent is necessary to preserve the technological and commercial feasibility of the aerosol antiperspirant standard, to ensure that safe aerosol antiperspirants continue to be available to California consumers, and to minimize the adverse economic impacts on manufacturers of aerosol antiperspirants;

The considerations identified above override any adverse environmental impacts that may occur from the amendments;
No feasible alternatives or mitigation measures have been identified that would reduce the excess VOC emissions and adverse environmental impact on ground level ozone concentrations, while at the same time providing the benefits described above; and

Other than the excess VOC emissions and adverse impact on ground level ozone concentrations, no other potential adverse environmental impacts will occur as a result of these amendments.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby adopts the amendments to sections 94502 and 94504, title 17, CCR, as set forth in Attachment A hereto.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to continue to: (1) monitor technical advances and evaluate all feasible cost effective emission reduction strategies to further reduce VOC emissions from antiperspirants and deodorants, and (2) report to the Board within one year on the results of this technical evaluation, and on staff's recommendations for future action.

BE IT FURTHER RESOLVED that, following approval by the Office of Administrative Law, the Board directs the Executive Officer to submit the amendments to the Antiperspirant and Deodorant Regulation to the U.S. EPA for inclusion in the SIP.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to include in the SIP revision any additional documentation identified as necessary for approvability under the federal Clean Air Act and the U.S. EPA regulations, and to work with the U.S. EPA to ensure that the amendments to the Antiperspirant and Deodorant Regulation are approved as a SIP revision.

I hereby certify that the above is a true and correct copy of Resolution 00-35, as adopted by the Air Resources Board.

[Signature]
Marie Kavan, Clerk of the Board

[Stamp]
Office of the Secretary
Revd By
APR 24 2001
Resources Agency of California
PROPOSED AMENDMENTS TO THE REGULATION FOR REDUCING VOLATILE ORGANIC COMPOUND EMISSIONS FROM ANTIPIERSPIRANTS AND DEODORANTS

[Note: The proposed amendments to sections 94502 and 94504, title 17, California Code of Regulations, are shown in strikeout to indicate proposed deletions and in underline to indicate proposed additions. No changes are proposed to Sections 94500, 94501, 94503, 94503.5, 94505, 94506, and 94506.5.]

Amend Title 17, California Code of Regulations, Sections 94502 and 94504 to read as follows:

SUBCHAPTER 8.5. CONSUMER PRODUCTS

94502. Standards for Antiperspirants and Deodorants.

(a) Except as provided in Sections 94503 (Exemptions), 94503.5 (Innovative Products), 94505 (Variances) and 94567(a)(1) (Hairspray Credit Program), Title 17, California Code of Regulations, no person shall sell, supply, offer for sale, or manufacture for sale in California any antiperspirant or deodorant which, at the time of sale or manufacture, contains volatile organic compounds in excess of the limits specified in the following Tables of Standards, after the specified effective date, or after any date that has been specified by the Executive Officer pursuant to subsections (d)(2) or (d)(5):

...
The following Table of Standards applies to products manufactured before January 1, 2001.

Table of Standards
For products manufactured before January 1, 2001
(percent volatile organic compounds by weight)

<table>
<thead>
<tr>
<th>Effective Dates</th>
<th>12/31/92</th>
<th>1/1/95</th>
<th>1/1/97</th>
<th>1/1/99</th>
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<tbody>
<tr>
<td></td>
<td>HVOC&lt;sup&gt;a&lt;/sup&gt;</td>
<td>MVOC&lt;sup&gt;a&lt;/sup&gt;</td>
<td>HVOC&lt;sup&gt;b&lt;/sup&gt;</td>
<td>MVOC&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Aerosol Products in Compliance Plan&lt;sup&gt;c&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Antiperspirants</td>
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<td>40</td>
<td>10</td>
</tr>
<tr>
<td>Deodorants</td>
<td>20</td>
<td>20</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>All Other Aerosol Products</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antiperspirants</td>
<td>60</td>
<td>20</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Deodorants</td>
<td>20</td>
<td>20</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Non-Aerosol Products</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<sup>a</sup> High volatility organic compounds, i.e., any organic compound that exerts a vapor pressure greater than 80 mm Hg when measured at 20°C.

<sup>b</sup> Medium volatility organic compounds, i.e., any organic compound that exerts a vapor pressure greater than 2 mm Hg and less than or equal to 80 mm Hg when measured at 20°C.

<sup>c</sup> These standards apply to aerosol products manufactured by companies that have submitted a compliance plan pursuant to Section 94502(d), which has been approved by the Executive Officer.

<sup>d</sup> The Board will hold a public hearing by July 1, 1997 to review and consider any appropriate modifications to the January 1, 1999 zero HVOC limits for aerosol antiperspirant and deodorant products.
The following Table of Standards applies to products manufactured beginning January 1, 2001.

**Table of Standards**

For products manufactured beginning January 1, 2001  
(percent volatile organic compounds by weight)

<table>
<thead>
<tr>
<th>Effective Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/1/01</td>
</tr>
<tr>
<td>HVOC(^a)</td>
</tr>
<tr>
<td>MVOC(^b)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aerosol Products</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Antiperspirants</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>Deodorants</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Non-Aerosol</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

\(^a\) High volatility organic compounds, i.e., any organic compound that exerts a vapor pressure greater than 80 mm Hg when measured at 20 C.

\(^b\) Medium volatility organic compounds, i.e., any organic compound that exerts a vapor pressure greater than 2 mm Hg and less than or equal to 80 mm Hg when measured at 20 C.

(b) No person shall sell, supply, offer for sale, or manufacture for sale in California any antiperspirant or deodorant which contains any of the following ozone-depleting compounds: CFC-11 (trichlorofluoromethane), CFC-12 (dichlorodifluoromethane), CFC-113 (1,1,2-trichloro-1,2,2-trifluoroethane), CFC-114 (1-chloro-1,1-difluoro-2-chloro-2,2-difluoroethane), CFC-115 (chloropentafluoroethane), halon 1211 (bromochlorodifluoromethane), halon 1301 (bromotrifluoromethane), halon 2404 dibromotetrafluoroethane), HCFC-22 (chlorodifluoromethane), HCFC-123 (2,2-dichloro-1,1,1-trifluoroethane), HCFC-124 (2-chloro-1,1,1,2-tetrafluoroethane), HCFC-141b (1,1-dichloro-1-fluoroethane), HCFC-142b (1-chloro-1,1-difluoroethane), 1,1,1-trichloroethane, and carbon tetrachloride.

(c) No person shall sell, supply, offer for sale, or manufacture for sale in California any antiperspirant or deodorant which contains any compound that has been identified by the ARB in Title 17, California Code of Regulations, Division 3, Chapter 1, Subchapter 7, Section 93000 as a toxic air contaminant.

(d) Special Requirements for Aerosol Manufacturers. This subsection (d) applies only to aerosol antiperspirant and deodorant products manufactured before January 1, 1999.
(1) A manufacturer of aerosol products may submit to the Executive Officer a compliance plan which describes how the manufacturer will achieve compliance with the requirements of Section 94502(a) for aerosol products.

(2) For each aerosol manufacturer who submits a compliance plan pursuant to subsection (d)(1), the Executive Officer shall suspend the 1/1/1995 requirements of section 94502(a) for aerosol products until a date on or before January 1, 1999, if the compliance plan demonstrates to the Executive Officer's satisfaction that the manufacturer is making good faith efforts, either independently or as part of a cooperative effort with other manufacturers, to develop aerosol products that will comply with the requirements of section 94502(a) in accordance with a schedule which is reasonably likely to enable the manufacturer to produce an acceptable aerosol product which complies with these requirements by a date on or before January 1, 1999. Before reaching a decision to suspend the requirements of Section 94502(a), the Executive Officer may request an aerosol manufacturer to modify the compliance plan to include additional information.

(3) In order to qualify for a suspension under subsection (d)(2), the compliance plan submitted by the manufacturer must contain all of the following:

(A) A compliance schedule setting forth the sequence and respective dates for all key events in the process of developing aerosol products complying with the requirements of Section 94502(a).

(B) A commitment by each manufacturer which specifies that:

1. No later than January 1, 1997, the manufacturer will complete reformulation of aerosol antiperspirant and deodorant products to meet the 1/1/1997 standards specified in Section 94502(a) for aerosol products in a compliance plan.

2. No later than January 1, 1997 the manufacturer will cease manufacturing products for use in California that do not comply with the 1/1/1997 standards specified in Section 94502(a) for aerosol products in a compliance plan.

3. No later than January 1, 2000 the manufacturer will cease to sell, supply, or offer for sale of all products manufactured prior to January 1, 1997 that do not comply with the 1/1/1997 standards specified in Section 94502(a) for aerosol products in a compliance plan.
(C) For each manufacturer, technical detail and information on the progress each manufacturer has made and the effort each plans to make to comply with both the 1/1/1997 and 1/1/1999 HVOC standards specified in Section 94502(a) for aerosol products in a compliance plan, including individual company timetables with "milestones" or increments of progress which allow progress to be measured. The technical information shall be sufficiently detailed to allow individual manufacturer's compliance efforts to be monitored including, at a minimum, the following information:

1. Documentation of past, planned and ongoing research to meet the 1/1/1997 HVOC standards. Documentation will include data to support whether the 1/1/1997 standards represent the lowest achievable HVOC content, by whatever method or technology is chosen by the manufacturer. If hydrofluorocarbon-152a ("HFC-152a") is a part of the technology to be used by the manufacturer, the information shall include, at a minimum: the manufacturer's current HFC-152a allocation for any use; the supply of HFC-152a to meet the manufacturer's needs for the aerosol antiperspirant and deodorant market; an indication as to whether the amount specified is needed to cover national or California sales; manufacturer's efforts to date to receive necessary allocations; time-frame to receive allocations; the actual path to compliance, including information on the types of formulations to be tested, formulation data, prototype testing, toxicity and stability tests, packaging and valve testing, safety and efficacy testing, consumer market testing and consumer acceptance, management decision for go-ahead, large-scale production, and availability to consumer; critical path identification; the expected date of aerosol antiperspirant and deodorant production that meets the 1/1/1997 standards; and a back-up plan that describes the manufacturer's actions should HFC-152a not be available in sufficient quantities.

If a compliance method or technology other than the use of HFC-152a is chosen, the information will include at a minimum: actual path to compliance, including information on the types of formulations to be tested, formulation data, prototype testing, toxicity and stability tests, packaging and valve testing, safety and efficacy testing, consumer market testing and consumer acceptance, management decision for go-ahead, large-scale production, and availability to consumer; critical path identification; expected date to produce aerosol antiperspirants and deodorants that meet the 1/1/1997 HVOC standards; and a back-up plan describing the manufacturer's actions should the chosen compliance method or technology not succeed.
2. A description of past, ongoing, and planned research efforts to achieve the 1/1/1999 HVOC standards. The information required will be the same as for the 1/1/1997 HVOC standards, as described in Section 94502(d)(3)(C) above. This information will also include a detailed description of the pursued technologies, current status of this technology, and the feasibility of attaining the 1/1/1999 standards. The documentation will outline key events and a timetable in the development of products to meet the 1/1/1999 HVOC standards and alternative plans if the technology does not develop as expected.

3. A list of products which each individual manufacturer will be producing under this compliance plan.

(4) A manufacturer who has received a suspension pursuant to subsection (d)(2) shall submit annual updates to the compliance plan to the Executive Officer on January 1, 1995, January 1, 1996, January 1, 1997, January 1, 1998, and January 1, 1999. These updates shall describe any changes or revisions that should be made to the compliance plan, based on any changed circumstances that have occurred since the submittal of the compliance plan or the last update. A manufacturer who has received a suspension pursuant to subsection (d)(2) shall also notify the Executive Officer in writing within 10 days after the failure of the manufacturer to meet any increment of progress specified in the compliance plan, or in any annual update to the compliance plan, and the likely effect of that failure on the ability of the manufacturer to comply with Section 94502(a) by the date specified by the Executive Officer pursuant to subsection (d)(2).

(5) Within 120 days after each compliance plan update is due, or within 120 days after notification by a manufacturer pursuant to subsection (d)(4), the Executive Officer shall determine whether the manufacturer is continuing to make good faith efforts to develop aerosol products that will comply with the requirements of section 94502(a) in accordance with a schedule which is reasonably likely to enable the manufacturer to produce an acceptable aerosol product which complies with these requirements. If the Executive Officer determines that the manufacturer is not making such good faith efforts, the Executive Officer shall withdraw the suspension effective immediately after upon written notification of the withdrawal to the manufacturer. Any antiperspirant or deodorant product manufactured prior to the date on which the manufacturer is notified that the suspension is withdrawn may be sold, supplied, or offered for sale up to three years after the effective date of the suspension withdrawal.

(6) A manufacturer may request a public hearing to review any decision made by the Executive Officer pursuant to subsections (d)(2) and (d)(5).
The hearing shall be held in accordance with the procedures specified in Title 17, California Code of Regulations, Division 3, Chapter 1, Subchapter 1, Article 4 (commencing with Section 60040).

(e) Notwithstanding the provisions of Section 94502(a), an antiperspirant or deodorant product manufactured prior to each of the effective dates specified for that product in the Table of Standards may be sold, supplied, or offered for sale up to three years after each of the specified effective dates. In addition, an aerosol antiperspirant or deodorant product manufactured prior to any compliance date specified by the Executive Officer pursuant to Section 94502(d)(2) may be sold, supplied, or offered for sale up to three years after the specified compliance date. This subsection (e) does not apply to any antiperspirant or deodorant product which does not display on the product container or package the date on which the product was manufactured, or a code indicating such date.


94504. Administrative Requirements

(a) Labeling.

(1) No later than three months after the effective date of this article, each manufacturer of an antiperspirant or deodorant subject to this article shall clearly display on each container of antiperspirant or deodorant, the date on which the product was manufactured, or a code indicating such date. If a manufacturer uses a code indicating the date of manufacture, an explanation of the code must be filed with the Executive Officer in advance of the code's use by the manufacturer.

(2) Location of Labeling Information: The date or date-code information required by subsection (a)(1) shall be located in the container so that it is readily observable without disassembling any part of the container or packaging.

(3) Defacing of Containers: No person shall erase, alter, deface or otherwise remove or make illegible any date or date-code from any regulated product container without the express authorization of the manufacturer.

(b) Reporting.

(1) No later than March 1 of every year, Upon 90 days written notice each manufacturer subject to this article shall submit to the Executive Officer a
written report. The report shall describe how the manufacturer will meet the requirements of Section 94502:

(2) The report submitted pursuant to subsection (b)(1) shall include the following information:

(A) the brand name for each antiperspirant or deodorant product;

(B) the owner of the trademark or brand name;

(C) the product forms (aerosol, pump, liquid, solid, etc.);

(D) the California annual sales in pounds per year and the method used to calculate California annual sales;

(E) the total VOC (as defined in Section 94501(m)) content in percent by weight which: (a) has a vapor pressure of 2.0 mm Hg or less at 20°C, or (b) consists of more than 10 carbon atoms, if the vapor pressure is unknown;

(F) the total HVOC and MVOC content and type (as defined in Section 94502(a)) in percent by weight;

(G) the percent by weight of VOC, water, solids, propellant, and any compounds that are exempt from the definition of VOC specified in section 94501;

(3H) Upon 90 days written notice, the Executive Officer may also require the manufacturer to supply any additional information necessary to determine volatile organic compound emissions from any antiperspirant or deodorant products that the Executive Officer may specify.

(4-2) All information submitted by manufacturers pursuant to Section 94504(b) shall be handled in accordance with the procedures specified in Title 17, California Code of Regulations, Sections 91000-91022.