

**Voluntary Certification of Consumer Cleaning Products Used at  
Institutional and Commercial Facilities**

Program Summary

**March 2007**

**Planning, Rule Development & Area Sources  
South Coast Air Quality Management District**

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## Introduction

As part of the overall strategy to reduce Volatile Organic Compound (VOC) emissions from consumer products used in commercial and institutional cleaning, the South Coast Air Quality Management District (AQMD) is initiating a VOC certification program. Control Measure CTS-03, Consumer Product Certification and Emission Reductions from Use of Consumer Products at Institutional and Commercial Facilities included in the Draft 2007 Air Quality Management Plan, directs staff to establish a label or certification program, based on criteria to distinguish super compliant low- and nearly zero-VOC consumer cleaning products used by institutional and commercial establishments.

This document provides a staff recommendation for the Governing Board's consideration that will allow expeditious implementation of the voluntary certification program included in the Draft 2007 AQMP. The AQMD's proposed program will not only consider air pollution, but will consider other factors that contribute to improving the environment and protecting human health.

## Background

Growing concern for environmental protection by consumers led to commercial enterprises making "green" claims as a marketing strategy. Often, the claims were unsupported and deliberately confusing, and lacked any empirical data to support the claims. Lack of credibility and impartiality led to the formation of private and public organizations seeking to influence consumer decisions and encourage the production and consumption of environmentally preferable goods as a market-based instrument intended to bring about environmental improvement.

Many of these organizations review environmental criteria such as air, water and waste impacts, energy consumption, recyclability, biodegradability, bioaccumulation, and safety and health implications like flammability, toxicity, carcinogenicity, mutagenicity, endocrine effects and sensitization. Some go further and attempt to review the "cradle-to-grave" life cycle considerations such as raw material extraction and manufacture. The criteria are typically determined by an independent private or governmental organizations with assistance from key stakeholders.

Internationally, there are 22 major environmental labeling programs covering 42 countries. In the United States, there are several organizations that provide third-party environmental life cycle review. United States Environmental Protection Agency's (U.S. EPA) Design for the Environment (DfE) Formulator Program and Green Seal are the current leading organizations for life-cycle eco-labeling in the U.S.

The AQMD currently has labeling and certification programs, including Clean Air Choices for low emission vehicles, a labeling program and Clean Air Solvent Certification for ultra low VOC cleaning solvents. Additionally, the AQMD has many

listings of “super compliant” or very low VOC content products including Super-Compliant Architectural/Industrial Coatings, alternative fuel street sweepers, boilers, chrome plating fume suppressants, internal combustion engines, water-based cleaners, air-tight or airless solvent degreasers and low VOC cleaning aerosol spray cans. All these lists may be easily accessed by the public.

The existing Clean Air Solvent Certification Program allows manufacturers of industrial and commercial cleaning solvents to apply for certification if they meet VOC and air toxics requirements. Clean Air Solvent (CAS) is defined in Rule 102 – Definition of Terms. The criteria for acquiring certification are:

- A. VOC content of 25 g/l or less of material as applied<sup>2</sup>;
- B. VOC composite partial vapor pressure less than 5 mm Hg<sup>3</sup>;
- C. Less reactive than toluene<sup>4</sup>;
- D. Contains no Hazardous Air Pollutants (HAPs)<sup>5</sup>, Ozone Depleting Compounds (ODCs)<sup>6</sup> or Global Warming Compounds (GWCs)<sup>7</sup>;
- E. Has been certified by the AQMD using test methods and procedures approved by the District<sup>8</sup>.

AQMD maintains a program website with an overview of the program, a list of certified products, participating companies and the protocol for Clean Air Solvent Certification. The protocol includes the information and fees required for certification, the laboratory procedures for determining certifiability and compliance requirements. Currently there are 73 companies that have over 140 products certified as a CAS. While the CAS program gives companies a certificate for each product and allows them to advertise their certification in literature and on their label, they are not authorized to use any type of AQMD logo.

Although difficult to quantify, it is anticipated that emission reductions could be realized from these programs. While measuring success may be difficult, it is reasonable to expect that such programs positively influence consumer behavior in selecting ultra-low VOC products and foster the marketing of ultra low polluting technologies. Global Ecolabelling Network (GEN) notes, “Given the difficulty in separating out the impact of ecolabelling from other economic, environmental and social policies, few programs have tried to claim direct environmental benefits from ecolabelling. Nevertheless, efforts so

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<sup>2</sup> Material VOC content is the weight of VOC per volume of material as diluted by water and/or exempt solvents. See the formula in section (b)(17) in Rule 1171.

<sup>3</sup> Calculated using the formula in section (b)(43) in Rule 1171.

<sup>4</sup> From the Maximum Incremental Reactivity List found in Appendix VIII of the CARB's *California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles* as amended on September 22, 1993.

<sup>5</sup> From Section 112 (b)(1) of the 1990 Clean Air Act Amendment

<sup>6</sup> Source: Pt. 82. Subpt. A, 40CFR Ch 1 (7/1/96 Edition)

<sup>7</sup> Source: United Nations Programme (UNEP), February 1995, Scientific Assessment of Ozone Depletion: 1994, Chapter 13, “Ozone Depleting Potentials, Global Warming Potentials and Future Chlorine/Bromine Loading.”

<sup>8</sup> SCAQMD Method 313 [Determination of Presence of Volatile Organic Compounds (VOC) in a Headspace and SCAQMD Method 308 (Quantitation of Compounds by Gas Chromatography).

far to measure the effectiveness of ecolabelling programs have generally focused on such indicators as the improvement in environmental quality of certified products, industry participation, and consumer recognition.” Thus an AQMD certification of low or nearly-zero VOC cleaning products will likely result in additional emission reductions.

Despite the difficulties in establishing criteria and measuring success, environmental purchasing is becoming widespread, especially with regard to cleaning products used by institutional and commercial establishments for janitorial cleaning. In 1998, Presidential Executive Order 13101 – Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition directed federal agencies to identify and purchase environmentally preferable products and services. Numerous federal, state and local institutional, industrial and commercial facilities developed programs to identify and purchase environmentally preferable products. Locally, the Los Angeles Unified School District and Santa Monica, as well as many non-profit and private companies have programs to use environmentally preferable cleaning products. The AQMD itself will begin an “Environmentally Friendly Cleaners” program beginning in March 2007.

Responding to the interest level of their clientele, most large and many medium and smaller-sized janitorial service providers now also have instituted “green” programs. Most janitorial service providers that do have a “green” program focus mainly on the use of more environmentally preferred cleaning chemicals but a few providers use a more holistic approach and include specialized equipment, employee training and waste stream management. Some of the environmentally preferred cleaning chemicals already in use in “green” programs will satisfy all of the proposed criteria and be eligible for certification as a super-compliant product under the proposed AQMD voluntary certification program.

#### AQMD Proposed Certification Program Structure

This program will model itself after the highly successful Clean Air Solvent (CAS) Certification program. The structure of AQMD’s efforts to provide recognition to super compliant low- and nearly zero-VOC consumer janitorial cleaning products used by institutional and commercial establishments is determined by the scope and breadth envisioned in the control measure. The positive, voluntary program will certify products that meet criteria intended to reduce air pollution and consider other factors that contribute to improving the environment and protecting human health. Certified products will be allowed to advertise their certification in literature and on their label, but not authorized to use any type of AQMD logo. Because the goal is to provide recognition for products that help to lower VOC emissions, it is clear that the AQMD certification will be a “positive” program.

The AQMD program will be voluntary for product manufacturers to foster the marketing of ultra-low polluting technologies and positively influence consumer behavior in selecting ultra-low VOC products. An application will be submitted along with a sample of the product and relevant documentation including a Material Safety Data Sheet (MSDS) and a Technical Data Sheet (TDS) detailing the volatile ingredients as defined in

AQMD Rule 102 – Definitions. If the product meets all of the applicable criteria, it will receive approval. Products that failed to meet one or more aspects of the criteria would not be penalized nor would they be required to disclose the reason for failure. A manufacturer would be able to claim confidentiality for their specific formulations forwarded to the AQMD.

In response to comments from concerned stakeholders to consider more comprehensive environmental criteria and retain flexibility in the certification process, staff is recommending a “dual approach” for companies to certify their products with AQMD. The first approach would be to submit products to the AQMD laboratory to verify that the product has a VOC content of 10 g/l or less and no prohibited ingredients in quantities of 0.1 percent by weight or greater are present. Prohibited ingredients include:

- Toxic Air Contaminants
- Hazardous Air Pollutants
- Ozone Depleting Compounds
- Global Warming Compounds
- Heavy Metals
- Great Waters Pollutants of Concern
- Carcinogens and Reproductive Toxins
- Alkylphenol Ethoxylates
- Dibutyl phthalates

The other option available would allow companies to present proof of certification for the above criteria other than VOC content, from a third-party life-cycle assessment organization approved by the AQMD to meet the comprehensive environmental criteria. Regardless of approach, the AQMD laboratory will verify for all products that the VOC content was 10 g/l or less based on Method 313-06.

The AQMD is aware that the cost of certification from third party certification organizations can be high. Allowing companies to submit products directly to the AQMD laboratory to test for prohibited ingredients will expand the number of small companies that can participate and avoid placing an unfair cost on smaller companies. For companies who have already chosen to certify with a third party certification organization, an expedited process is available where only VOC testing is required.

### *Categories*

To determine the categories of cleaning products applicable to a certification program, it is useful to define institutional and commercial establishments. Applicable facilities will include amusement parks, auditoriums, arenas, government agencies, hotels, office buildings, museums, schools, shopping centers, stores, warehouses and non-manufacturing area of industrial buildings.

Typical products, and corresponding CARB definitions, used for janitorial cleaning operations conducted in applicable facilities and targeted in the control measure are the following:

- Air Freshener – Any product including but not limited to, sprays, wicks, powders, and crystals, designed for the purpose of masking odors, or freshening, cleaning, scenting, or deodorizing the air.
- Bathroom and Tile Cleaner – A product designed or labeled to clean tile or surfaces in bathrooms. Bathroom and Tile Cleaner does not include Toilet/Urinal Care Products.
- Carpet and Upholstery Cleaner – A cleaning product designed for the purpose of eliminating dirt and stains on rugs, carpeting, and the interior of motor vehicles and/or furniture or objects upholstered or covered with fabrics such as wool, cotton, nylon or other synthetic fabrics. Carpet and Upholstery Cleaner includes, but is not limited to, products that make fabric protectant claims.
- Floor Polish or Wax – A product designed or labeled to polish, wax, condition, protect, temporarily seal, or otherwise enhance floor surfaces by leaving a protective finish that is designed or labeled to be periodically replenished.
- Floor Wax Stripper – A product designed to remove natural or synthetic floor polishes or waxes through breakdown of the polish or wax polymers, or by dissolving or emulsifying the polish or wax.
- General Purpose Cleaner – A general purpose cleaning product labeled for use on a variety of hard surfaces, including small appliances. General Purpose Cleaner includes, but is not limited to, products designed or labeled for general floor cleaning, kitchen, countertop, or sink cleaning, and cleaners designed or labeled to be used on a variety of hard surfaces such as stovetops, cooktops, or microwaves.
- General Purpose Degreaser – Any product labeled to remove or dissolve grease, grime, oil and other oil-based contaminants from a variety of substrates, including automotive or miscellaneous parts.
- Glass Cleaner – A cleaning product designed primarily for cleaning surfaces made of glass. Glass cleaner does not include products designed solely for the purpose of cleaning optical materials used in eyeglasses, photographic equipment, scientific equipment and photocopying machines.
- Metal Polish/Cleanser – Any product designed primarily to improve the appearance of finished metal, metallic, or metallized surfaces by physical or chemical action. To improve the appearance means to remove or reduce stains, impurities, or oxidation from surfaces or to make surfaces smooth and shiny. Metal Polish/Cleanser includes, but is not limited to, metal polishes used on brass, silver, chrome, copper, stainless steel and other ornamental metals.
- Toilet/Urinal Care Product – Any product designed or labeled to clean and/or deodorize toilet bowls, toilet tanks, or urinals. Toilet bowls, toilet tanks, or urinals includes, but is not limited to, toilets or urinals connected to permanent plumbing in buildings and other structures, portable toilets or urinals placed at temporary or remote locations, and toilet and urinals in vehicles such as buses,

recreational motor homes, boats, ships, and aircraft. Toilet/Urinal Care Product does not include Bathroom and Tile Cleaner or General Purpose Cleaner.

CARB has applicable VOC limits for the above mentioned categories and these are generally higher than the approvable levels for the AQMD certification program (see Table 1 below). CARB’s regulation specifies the VOC content limit in weight percent and exempts low vapor pressure (LVP) solvents. At the state, federal and international levels, LVP solvents with a vapor pressure less than 0.1 mm Hg are not considered as VOC when determining VOC content for consumer products. In contrast, the AQMD test method will consider these LVP solvents to contribute to the VOC content making the AQMD limit more stringent. The reason LVP materials are considered VOCs is that they will eventually evaporate (albeit at a slower rate) and contribute to ozone formation. Additionally, many of the categories have higher applicable CARB limits for the same products that are packaged in aerosol form.

**Table 1  
CARB VOC Limit by Product Category**

Product	VOC Limit (Percent VOC by Weight)	
	CARB*	AQMD Certification**
Air Freshener	18	1 (10 g/l)
Bathroom and Tile Cleaner	1	1 (10 g/l)
Carpet and Upholstery Cleaner <sup>9</sup>	3	1 (10 g/l)
Floor Polish or Wax	1	1 (10 g/l)
Floor Wax Stripper	3	1 (10 g/l)
General Purpose Cleaner	4	1 (10 g/l)
General Purpose Degreaser	4	1 (10 g/l)
Glass Cleaner	4	1 (10 g/l)
Metal Polish/Cleanser	30	1 (10 g/l)
Toilet/Urinal Care Product	3	1 (10 g/l)

\* CARB limit does not include LVP solvents as VOC

\*\*AQMD limit includes LVP solvents as VOC

The proposed program will not be limited only to janitorial cleaning products used at institutional or commercial buildings. Any cleaning products in the categories applicable to the certification program that satisfy the recommended criteria will also be considered for certification, if requested.

<sup>9</sup> VOC content limit is 0.1% by weight for dilutable Carpet and Upholstery Cleaners

## *Criteria and Test Methodologies*

Below are criteria and associated analytical methodologies for the proposed certification program. Based on experience with the CAS program, the cost of testing is expected to be between \$700 and \$1,000, per product.

### VOC Content

VOC content of 10 g/l or less of material as applied measured using AQMD Method 313-06, Determination of Volatile Organic Compounds (VOC) by Gas Chromatography/Mass Spectrometry (GC/MS). The VOC content must be determined by AQMD's laboratory or by a laboratory under contract to AQMD to perform such analysis on behalf of AQMD.

### Prohibited Components

Less than 0.1 percent by weight of any of the following compounds as measured by AQMD Method 313-06 (GC/MS):

- Toxic Air Contaminants (TAC) as listed in AB 1807 Toxic Air Contaminant Program
- Hazardous Air Pollutants (HAP) as listed in Section 112 (b) of the Federal Clean Air Act
- Ozone Depleting Compounds (ODC) as listed in 40 CFR Part 82
- Global Warming Compounds (GWC) including CF<sub>4</sub> (Perfluoromethane), HFCs (hydrofluorocarbons), HFEs (hydrofluoroethers), PFCs (perfluorocarbons), SF<sub>6</sub> (sulfur hexafluoride) and N<sub>2</sub>O (nitrous oxide)
- Heavy Metals including arsenic, lead, cadmium, cobalt, copper, chromium, mercury, nickel and zinc
- Great Waters Pollutants of Concern as listed in U.S. EPA's *Deposition of Air Pollutants to the Great Waters*
- Carcinogens as listed by the International Agency for Research on Cancer (IARC), National Toxicology Program, U.S. EPA or the Occupational Health and Safety Administration
- Carcinogens or Reproductive Toxins as listed in the State of California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)
- Alkylphenol ethoxylates
- Dibutyl phthalates

Many of the comments from the public share the common concern that the standards of a narrow focus air quality certification program were not comprehensive enough. To address those comments and encompass a more comprehensive assessment of potential environmental impacts, the final program will be limited to products that can demonstrate that they meet the wide range of environmentally comprehensive criteria referenced

above. This can be accomplished in one of two ways. The first is to submit products to the AQMD laboratory to verify that no prohibited ingredients in quantities of 0.1 percent or greater by weight are present. The alternative path to this part of certification is for the company to prove that the product has been previously certified by an approved third party certification organization such as Green Seal, U.S. EPA Design for the Environment or EcoLogo. Eligible products, as noted above, will also need to verify through AQMD laboratory testing that the VOC content of the product as used was 10 g/l or less.

### Summary

Based on staff analysis, considering the input of stakeholders, it is recommended the AQMD develop a voluntary comprehensive certification program for super compliant commercial and institutional janitorial cleaning consumer products. The categories of products targeted for certification will include air fresheners, bathroom and tile cleaners, carpet and upholstery cleaners, floor polish or wax, floor wax strippers, glass cleaners, general purpose cleaners, general purpose degreasers, metal polish/cleansers and toilet and urinal care products. Other products outside of commercial and institutional janitorial cleaning consumer products will be considered as appropriate. Eligible products will have to be submitted to the AQMD laboratory to verify that no prohibited ingredients in quantities of 0.1 percent or greater by weight are present or be previously certified by an approved third party certification organization such as Green Seal, U.S. EPA Design for the Environment, or EcoLogo. Additionally, products must have a VOC content less than or equal to 10 g/l as tested by AQMD under Test Method 313-06.

## References

Federal Trade Commission. Complying with the Environmental Marketing Guides

Global Ecolabelling Network. Introduction to Ecolabelling. July 2004.

Green Seal, Inc. International Standards for Eco-Labeling.

<http://www.greenseal.org/certification/international.cfm>

Green Seal, Inc. Green Seal Environmental Standard for General-Purpose, Bathroom, Glass, and Carpet Cleaners Used for Industrial and Institutional Purposes. February 27, 2006

Green Seal Inc. Green Seal Environmental Standard for Floor-Care Products: Finishes and Compatible Strippers Used for Industrial and Institutional Purposes (GS-40).

November 12, 2004

South Coast Air Quality Management District. Clean Air Solvent Certification Program, October 22, 2004.

<http://www.aqmd.gov/rules/cas/index.html>

South Coast Air Quality Management District. Super-Compliant Architectural Coating Manufacturers, July 27, 2005.

[http://www.aqmd.gov/prdas/brochures/Super-Compliant\\_AIM.pdf](http://www.aqmd.gov/prdas/brochures/Super-Compliant_AIM.pdf)

South Coast Air Quality Management District. Clean Air Choices Program, November 8, 2006.

<http://www.aqmd.gov/CleanAirChoices/index.html>

United States Environmental Protection Agency. Environmental Labeling Issues, Policies, and Practices Worldwide. December 1998

United States Environmental Protection Agency. Design for the Environment Formulator Program: A Discriminating and Protective Approach to Cleaning Product Review and Recognition. July 2006

**APPENDIX A**

**Clean Air Choices  
Cleaner Certification Protocol**

**Clean Air Choices  
Cleaner Certification Protocol  
Planning, Rule Development & Area Sources**

March 2007

## I. OVERVIEW

This protocol contains information on how an applicant may obtain a Clean Air Choices Cleaner Certificate. Primarily, the Clean Air Choices Cleaner is considered a super compliant consumer product janitorial cleaner used at commercial and institutional facilities. Other types of products will be considered as appropriate. To be eligible, a product must be submitted to the AQMD laboratory to verify that no prohibited ingredients in quantities of 0.1 percent or greater by weight are present or have been previously certified by an approved third party certification organization such as Green Seal, U.S. EPA Design for the Environment or EcoLogo. Super compliant means that the product has a Volatile Organic Compound (VOC) content of 10 g/l or less as verified by AQMD's laboratory or an AQMD certified independent laboratory, using Test Method 313-06.

The South Coast Air Quality Management District (AQMD) will notify applicants of the finding of laboratory analysis within 90 days of the receipt of all requested information. A certificate will be issued within 30 days of such notification if the product is approved as a Clean Air Choices Cleaner by the AQMD.

### Information Required

Name of the product (including chemical name, if any);  
Applicable product category or intended use;  
Name, address, telephone, fax number and e-mail address of the applicant (and contact person, if different);  
Formulation data sheet for the product, if available (will be treated as confidential if requested);  
Material data sheet for the product;  
Sealed, unopened 1 quart sample of product;  
Complete user instructions on how the product is intended to be used, including dilution and/or mixing ratios and any other relevant information;  
(Optional) Copy of official letter and/or certificate awarded by an approved third party certification organization

### Fee Required

At the time of filing for a Clean Air Choices Cleaner Certificate, the applicant must submit with the sample product a fee for each product to be tested. This fee includes the

GC/MS analysis for 5 or fewer compounds, one (1) hour time and material, and the certificate.

These fees are taken from AQMD Rule 304.1 and will be based on the current version of the rule at the time of submittal.

Submittal Address

Clean Air Choices  
Cleaner Certification  
Attn: Mike Morris  
Planning, Rule Development & Area Sources  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4182

II. LABORATORY ANALYSIS

The VOC content of the product will be determined by testing the unopened submitted product sample. Analysis will be performed by the AQMD Laboratory using the most recent version of SCAQMD Method 313-06, Determination of Volatile Compounds (VOC) by Gas Chromatography/Mass Spectrometry (GC/MS). A product must have a VOC content of 10 g/l or less to be eligible. In addition, parties that opt to submit products for full laboratory testing must have the AQMD Laboratory perform GC/MS analysis for the presence, in quantities of 0.1 percent by weight or greater, of the following prohibited compounds:

- Toxic Air Contaminants (TAC) as listed in AB 1807 Toxic Air Contaminant Program
- Hazardous Air Pollutants (HAP) as listed in Section 112 (b) of the Federal Clean Air Act
- Ozone Depleting Compounds (ODC) as listed in 40 CFR Part 82
- Global Warming Compounds (GWC) including CF<sub>4</sub> (Perfluoromethane), HFCs (hydrofluorocarbons), HFEs (hydrofluoroethers), PFCs (perfluorocarbons), SF<sub>6</sub> (sulfur hexafluoride) and N<sub>2</sub>O (nitrous oxide)
- Heavy Metals including arsenic, lead, cadmium, cobalt, copper, chromium, mercury, nickel and zinc
- Great Waters Pollutants of Concern as listed in U.S. EPA's *Deposition of Air Pollutants to the Great Waters*
- Carcinogens as listed by the International Agency for Research on Cancer (IARC), National Toxicology Program, U.S. EPA or the Occupational Health and Safety Administration

- Carcinogens or Reproductive Toxins as listed in the State of California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)
- Alkylphenol ethoxylates;
- Dibutyl phthalates;

In lieu of AQMD testing for the above pollutant concerns, manufacturers can submit approved third party certifications as noted under Section I above.

If the above procedures are successfully completed, a Clean Air Choices Cleaner Certificate will be awarded.

### III. COMPLIANCE AND FIELD AUDITS

A Clean Air Choices Cleaner Certificate shall be valid for three years from the date of issuance and may be renewed upon recertification. The recertification fee shall be according to the fees specified in the most current Rule 304.1 fees. Any person utilizing a Clean Air Choices Cleaner shall comply with the conditions of use stated on the certificate. If a Clean Air Choices Cleaner is reformulated, the Clean Air Choices Cleaner Certificate will be considered invalid and the new product must be reevaluated to obtain a new certificate.

The Executive Officer may conduct field audits to determine continuous compliance by sampling an unopened concentrated product in the field. If the results of the laboratory analysis show that the product no longer meets certification criteria, the Executive Officer may revoke the Clean Air Choices Cleaner Certificate.