

# Implementing the Regulation to Limit Ozone Emissions from Indoor Air Cleaning Devices



California Air Resources Board

December 4, 2008

Thank you and good morning. Welcome everyone to today's teleconference to discuss the CA regulation to limit ozone emissions from indoor air cleaning devices. Our purpose today is to discuss the requirements and implementation of the air cleaner regulation. We have two goals today – first, that everyone leaves this call with a clearer understanding of what is required and how the regulation is being implemented; and second, for us to be able to anticipate any problems and address them early on, thereby making the process as smooth as possible.

The format or agenda for today's meeting will be a relatively short presentation (about 20 minutes) on the regulation, to be followed by questions from you listening in and discussion of those questions and finally a wrap-up at the end. Regarding questions – you may ask them over the phone if you called in, or you may email your questions to [sierrarm@arb.ca.gov](mailto:sierrarm@arb.ca.gov).

With those details covered, let's move on to an outline of today's presentation.

# Outline

- Background
- Affected devices and types of air cleaners
- Test methods – ozone and electrical safety
- Certification by ARB
- Exemptions and exclusions
- Labeling, notification and record-keeping requirements
- Enforcement and penalties
- Further information

Let me add my welcome to everyone for joining us today.

I will provide background information about the regulation, and then quickly move to describing (1) the applicability of the regulation; (2) the testing that is required; (3) the certification requirement; (4) several exemptions and exclusions that are provided for under certain conditions; (5) and several additional requirements that I will describe, specifically for labeling, notification to known distributors, retailers, and sellers, and for record-keeping. (6) Next I will touch on enforcement of the regulation; (7) and in closing provide you with information sources you can use.

Let's move to background...

## Background

- **AB 2276 - requires ozone emission limit and certification**
- **Purpose of the regulation – prevent unhealthful exposures to ozone**
- **Effective date – October 18, 2008**
- **Compliance date for testing and certification – October 18, 2010**

Concern over the potential harm from exposure to ozone from ozone-generating air cleaners dates back many years. The Air Resources Board each year issued press releases warning the public about the harmful effects of breathing ozone, but not until 2006 and the passage of AB2276 did the ARB have the authority to regulate such devices. The purpose of the regulation we are discussing today is to prevent unhealthful exposures to ozone.

The regulation received final state approval and became effective on October 18, 2008. The full compliance date is October 18, 2010. This means that, in summary, no person or business can manufacture, sell, or offer for sale for use in CA, after October 18, 2010, any indoor air cleaning device for use in occupied spaces unless the device is certified by the ARB to produce an ozone emission concentration that does not exceed 0.050 parts per million (ppm).

## Affected Devices

- Medical and non-medical air cleaners
- Air cleaners designed for:
  - Single room
  - Whole floor
  - Whole house
  - Vehicles
  - Personal use
- Devices advertised, offered for sale or sold in California

The regulation applies to both medical and non-medical indoor air cleaning devices. Air cleaners designed for use in a single room, whole floor, whole house, or vehicle, and those designed to be worn by the person, are all subject to the regulation. Any device that is advertised, offered for sale, or sold in California must meet the ozone standard and regulation requirements, unless specifically exempted, including devices marketed via the Internet and shipped to California addresses.

## **Regulation Applies to all Types of Air Cleaners**

- **Mechanical filtration devices: use a filtering media**
- **Ionizers and electrostatic precipitators: electronic devices that may emit ozone as a by-product of operation**
- **Photocatalytic devices with ultraviolet light**
- **Ozone generators: electronic devices that intentionally emit ozone**
- **Combination units**

The regulation applies to all types of air cleaners. It applies to mechanical filtration devices that use a filtering media and emit little or no ozone. Ionizers and ESPs may emit ozone as a by-product of their operation, but typically low levels. The regulation applies to all photocatalytic air cleaners, including those that use ultraviolet light, and they must also be tested. Ozone generators that intentionally emit ozone or are designed to do so are the devices we are most concerned about. Many devices use a combination of one or more of these technologies; all such air cleaners must be tested.

# Ozone Emission Concentration Standard

- **Devices must meet 0.050 ppm ozone emission concentration standard**
- **Consistent with federal standard**
- **Test method: ANSI / UL Standard 867, revised Section 37 (December 21, 2007 version)**

The regulation sets a 0.050 parts per million ozone emission concentration limit for indoor air cleaning devices used in occupied spaces and offered for sale in California. This is consistent with the current United States Food and Drug Administration standard for medical devices. The ozone levels must be tested using the protocol in ANSI / UL Standard 867 with the revised ozone test in Section 37, dated December 21, 2007.

## Ozone Test Method

- **2007 Revised Section 37 of the ANSI / UL Standard 867**
  - Improved background ozone calculations
  - New chamber performance specifications
  - 8- and 24-hour chamber tests
  - Multiple tests may be required if more settings
- **N.R.T.L. and/or OSHA Program 2 laboratories**
- **Testing of one model within a model group**
- **Mechanical filtration-only devices exempted, but still must meet ANSI / UL Std 507**

The changes incorporated into the December 21, 2007 Section 37 ozone test protocol of ANSI/UL Standard 867 were quite significant. They include improved ozone background calculations, new test chamber performance specifications; and options for 8- and 24-hour chamber tests. Multiple tests may be required if the device has multiple settings or optional functions.

Ozone emissions testing will only be accepted from Nationally Recognized Testing Laboratories, commonly referred to as N.R.T.L.s, or from independent laboratories meeting the Occupational Safety and Health Administration's N.R.T.L. Program 2 requirements.

To reduce the impact on manufacturers, the regulation requires testing of only one model within a model group. I'll come back to model group in a minute. "Mechanical filtration only" devices are exempt from ozone emissions testing because they emit little or no ozone.

## Model Group

- Same manufacturer
- Share same design, operational features, device output and performance characteristics
- May be marketed under different brands
- Decorative treatments or other cosmetic features may vary

In our regulation, model group is defined as air cleaners that are produced by the same manufacturer and share the same design, operational features, output and performance characteristics. They may be marketed under different brand names, but they can differ only in their decorative treatments or other cosmetic features.

Note that this definition is intentionally somewhat more restricted than the term “model family” used in the industry.

## Electrical Safety Test Required

- Electrical safety testing ensures safety if device is modified to comply
- Most devices: ANSI / UL Standard 867
- Mechanical filtration-only devices: ANSI / UL Standard 507
- Must display the certification or listing mark

Examples:



In addition to the ozone testing, the regulation requires indoor air cleaning devices to successfully complete testing for electrical safety. Including electrical safety testing ensures that any modifications made to air cleaners to comply with the ozone limit do not compromise the electrical safety of the device and ensures that air cleaners sold to California consumers are safe to use. Most indoor air cleaning devices will be evaluated under ANSI/UL Standard 867, the electrical safety standard for electrostatic air cleaners.

Air cleaners that use only mechanical filtration will be tested following the ANSI/UL Standard 507, which is the current electrical safety standard for such appliances. Upon completing the electrical safety testing, the device is required to display the relevant certification mark where required. Shown here are examples of the certification and listing marks from two of the certification organizations, Underwriters Laboratories, Inc. and Intertek.

## Devices Must Be Certified

- **Must be ARB certified for sale in California**
- **Applications may be submitted by the manufacturer or a representative, and include:**
  - **Manufacturer and model information**
  - **Test results and signatures**
- **Applications reviewed for:**
  - **Completeness (max. 30 days)**
  - **Approval (max. 30 days after application is complete)**
- **Certification issued to manufacturer**

All non-exempt indoor air cleaning devices must be certified by ARB prior to sale in California. Certification applications may be submitted by the manufacturer or by a representative of a professional or certification organization. Each application must include manufacturer and model information, test results for both ozone and electrical safety, and other required information, and must be accompanied by signatures from the manufacturer and testing laboratory representatives. Applications will be reviewed by ARB for completeness, and the manufacturer notified within 30 days of receipt whether the application is complete or deficient. Once accepted, the application will be evaluated for certification within 30 days after the application is accepted as complete. If approved, ARB will issue the certification to the manufacturer, and add the device to a list of certified models on the ARB website.

## Exemptions: Industrial Use and In-duct Devices

- Industrial use: devices used solely for industrial applications
  - Must be manufactured, advertised, and marketed for industrial use only
  - Must be obtained only via industrial suppliers
  - Must be labeled: “Solely for industrial use. Potential health hazard: emits ozone.”
- In-duct Systems: must be an integrated component of a central air system

Moving now to exemptions and exclusions...

The adopted regulation includes an exemption from meeting the ozone emission concentration limit for indoor air cleaning devices that are for industrial use or are considered an in-duct device. Industrial use devices must be:

Manufactured, advertised, and marketed for industrial use only;

Obtained solely through industrial suppliers and;

Labeled “Solely for industrial use. Potential health hazard: emits ozone.”

We'll come back to this in a moment.

The second exemption provided is for in-duct indoor air cleaning devices. They must be designed, marketed and used solely as a physically integrated component of a central heating, air conditioning or ventilating air system.

ARB may reevaluate these exemptions if future research indicates the potential for high ozone exposure to users of these devices.

## Industrial Uses Exempted

- “Industrial Use” means the use of ozone for:
  - Water purification
  - Microbe control on produce
  - Oxidation / disinfection in electronics, chemical, pharmaceutical, and biotechnology industries
  - Bleaching etc. in pulp and paper industry
  - Odor control of industrial stack gases or wastewater
  - Odor and smoke control in hotels in unoccupied areas
  - Mold remediation in unoccupied areas
  - Fire and smoke damage remediation in unoccupied areas
  - Motor vehicle reconditioning in unoccupied areas

Returning to industrial use devices, the regulation defines industrial use to be the following:

Water purification

Microbe control on produce

Oxidation / disinfection in electronics, chemical, pharmaceutical, and biotechnology industries

Bleaching etc. in pulp and paper industry

Odor control of industrial stack gases or wastewater

Odor and smoke control in hotels in unoccupied areas

Mold remediation in unoccupied areas

Fire and smoke damage remediation in unoccupied areas

Motor vehicle reconditioning in unoccupied areas

Note that devices for odor and smoke control in hotels, mold remediation, fire and smoke damage remediation, and motor vehicle reconditioning satisfy the industrial use definition only when the area in which the device is used is **unoccupied**.

## Labeling Requirements

- All devices sold in California must be labeled
- Medical device packaging must comply with federal law and include “ARB certified”
- Non-medical devices must display “This air cleaner complies with the federal ozone emissions limit. ARB certified”
- Any non-industrial air cleaner sold via Internet web pages, ads or catalogs that is not ARB certified must display specified warning label on the relevant pages

Next, I'll describe the requirements for labeling, notification, and recordkeeping.

For the labeling requirements, medical devices must be labeled in accordance with federal law and must also include a label stating “ARB certified” on the product packaging. Non-medical devices must display a label on the product packaging stating “This air cleaner complies with the federal ozone emissions limit. ARB certified” on product packaging. For non-medical devices, the label must be at least 1 inch by 2 inches in size, and be easily readable.

Any non-industrial indoor air cleaning devices sold over the Internet or via mail order catalog that are not ARB certified by October 18, 2010 must display a warning label that reads: “Does not meet California requirements; cannot be shipped to California.” on all relevant catalog and Internet pages.

## Labeling Compliance Dates

- **October 18, 2010 – full compliance date**
- **180 day extension from the postmarked notification of certification if:**
  - **Device is submitted for testing before 10/18/09, and**
  - **Unable to be certified by 4/30/10**

(Note: this language has been revised for clarity after the webcast meeting).

Regarding the compliance dates for labeling, all product packaging must be labeled by October 18, 2010, the full compliance date for air cleaning devices to be tested and certified for sale in CA. However, the regulation provides an extension of the labeling requirement for air cleaners that are submitted for testing before October 18, 2009 but are unable to be certified by April 30, 2010. This extension was included in the regulation to address possible delays with testing by the selected laboratory, delays with processing of applications at ARB, or other circumstances which are beyond the manufacturers' control.

Manufacturers in this situation will thus have six months from the certification postmark date to comply with the labeling requirement.

In other words, if you submit a device for testing within the first year of testing, but the device has not been certified by April 30, 2010 (about six months before the full compliance date), you will have six months, starting from the postmark date of the notification of product certification, to meet the labeling requirements.

## Notification and Record-keeping

- **Manufacturers must provide copies of regulation to their California distributors**
- **Notification documentation and contact information for all California distributors, retailers, and sellers sent to ARB by October 18, 2009**
- **Retain records for 3 years; provide to ARB upon request**

In addition to the certification, testing and labeling requirements there are notification and record-keeping requirements.

Manufacturers must notify their California distributors, retailers and sellers within the first year of the regulatory effective date, provide them copies of the final approved regulation order, and submit verification to ARB of completing the notification requirements. All of this must be completed by October 18, 2009.

Manufacturers must also provide the contact information for all their California distributors, retailers and sellers to ARB.

Manufacturers, distributors, retailers and testing laboratories are required to maintain their production, sales, and testing information for three years, where applicable, and provide the information to ARB upon request.

## Compliance Dates

- **Regulation effective date – October 18, 2008**
- **Notify distributors and send documentation and contact info to ARB by October 18, 2009**
- **Testing and certification compliance by October 18, 2010**
- **Labeling extension for certain air cleaners – postmark date of certification notification + 6 months**

We've covered these dates in earlier slides, but to summarize the compliance dates...

- (1) The regulation became effective on October 18, 2008, starting the two-year testing and certification period.
- (2) Manufacturers must notify their distributors, retailers and sellers about the regulation within the first year, by October 18, 2009. They must also provide the contact information for these entities to ARB by this date. Contact information can remain confidential upon request, in accordance with state regulation.
- (3) No air cleaner can be sold for use in occupied spaces after October 18, 2010 unless it is certified as having been tested and shown to comply with the ozone emission concentration limit.
- (4) And finally, while the full compliance date is October 18, 2010, as I mentioned there is a 6 month extension allowed for meeting the labeling requirements under certain conditions.

## Enforcement and Penalties

- Certification applications may be denied, or a certification revoked or suspended
- ARB may order product recall and replacement with compliant products
- Other penalties authorized by law, such as monetary penalties (\$1000 - \$1M per day, depending on the violation, H&SC 42400 *et seq.*)

Now, moving to enforcement...

Failure to comply with the regulation may result in penalties. Certification applications may be denied, or an existing certification may be revoked or suspended. If a device is found to be noncompliant with the regulation, ARB may order the product recalled and replaced with compliant products. Additionally, all other penalties authorized by law, such as monetary penalties, apply as well.

## Interpretations to Date

- Annual renewal of laboratory approval
- Portable air conditioner with air cleaner is covered under regulation
- Specific questions on model group
  - Rotary vs. electronic switch: same model group
  - Different motors or filters: different model group
- Pending:
  - In-duct device, specific application
  - Definition of distributor for notification requirement

Several questions and issues have come up during the past several months that ARB staff have reviewed and considered, and we have made some decisions on them. I'd like to summarize several of these so that all of you are aware of decisions made to date.

- (1) First, we clarified to the NRTL laboratories interested in conducting tests for certification of air cleaners under this regulation that, in addition to the initial audit we conduct for approval of the laboratory, we will conduct an annual review of the laboratory's performance.
- (2) Second, we determined that portable air conditioners with a designated air cleaner unit inside as part of the overall design are covered under this regulation, and must be tested and comply with the requirements of this regulation.
- (3) Third, we received several questions regarding model group. One decision was that air cleaners with the same motors, filters and design but with an electric vs. rotary switch would be considered to be in the same model group. However, if the motors or the filters differ, then they would NOT be in the same model group.
- (4) Finally, we still have several requests that are pending. One is a question about whether a specific add-on air cleaner qualifies as a physically integrated in-duct device, and the second is regarding the definition of a distributor, relative to the notification requirement.

## Further Information

- Air cleaner regulation web page:  
<http://www.arb.ca.gov/research/indoor/aircleaners/aircleaners.htm>
- Certification application:  
<http://www.arb.ca.gov/research/indoor/aircleaners/certification.htm>
- Please sign up for email list serve updates:  
<http://www.arb.ca.gov/listserv/listserv.php>
- Staff contacts:
  - Certification and testing:  
Ryan Johnson 916-323-2190 [rjohnson@arb.ca.gov](mailto:rjohnson@arb.ca.gov)
  - General information:  
Jim Behrman 916-322-8278 [jbehrman@arb.ca.gov](mailto:jbehrman@arb.ca.gov)

Thank you for joining us today.

We'll take questions in just a moment, but if you have questions or need assistance after this workshop today, please visit the web pages shown on this slide, or contact us directly. For questions on the certification and testing process, please contact Ryan Johnson, and for questions on other aspects of the regulation such as the notification or labeling requirements, you can contact me, Jim Behrman.

I especially encourage you to read over the regulation in its entirety, to be sure you are aware of all of the specific provisions. Also, we have prepared some Frequently Asked Questions that are posted on the regulation website; those cover the major aspects of the regulation.

So now I'll turn the microphone back over to Peggy for the question and answer period.

Peggy...