

Updated Informative Digest

ADOPTION OF AMENDMENTS TO THE REGULATION FOR REDUCING VOLATILE ORGANIC COMPOUND EMISSIONS FROM AEROSOL COATING PRODUCTS AND TABLES OF MAXIMUM INCREMENTAL REACTIVITY (MIR) VALUES, AND ADOPTION OF AMENDMENTS TO ARB TEST METHOD 310, "DETERMINATION OF VOLATILE ORGANIC COMPOUNDS IN CONSUMER PRODUCTS"

Sections Affected: Amendments were made to sections 94521- 94524, and 94526, title 17, California Code of Regulations (CCR); a new subchapter 8.6, sections 94700 and 94701, title 17, CCR was adopted; and amendments were adopted to ARB Method 310, which is incorporated by reference in section 94526, title 17, CCR.

Background

Section 41712(i) of the California Health and Safety Code requires the Air Resources Board (ARB or Board), on or before January 1, 1995, to adopt regulations to achieve the maximum feasible reduction in volatile organic compound (VOC) emissions from the use of aerosol paints (aerosol coatings). To fulfill this statutory directive, in March 1995 the ARB adopted a regulation establishing two tiers of VOC limits for 35 categories of aerosol coatings (Aerosol Coatings Regulation). The first tier became effective on January 8, 1996, and the second tier was scheduled to become effective on December 31, 1999.

Section 41712(i)(3) of the Health and Safety Code also requires the ARB, on or before December 31, 1998, to conduct a public hearing on the technological or commercial feasibility of achieving full compliance with the 1999 limits. On November 19, 1998, the ARB conducted a public hearing and determined that some of the 1999 second tier limits were not technologically and commercially feasible, and also determined that some of the 1999 second tier limits did not represent the most stringent feasible VOC limits. Therefore, at the hearing the ARB adopted less stringent VOC limits for 23 aerosol coating product categories and more stringent VOC limits for 12 aerosol coating product categories. The Board also extended the effective date to January 1, 2002.

Description of the Adopted Regulatory Action

The Board adopted the following regulatory actions:

- 1. The Aerosol Coating Regulation was amended by replacing the second tier mass-based VOC limits for 35 product categories with equivalent reactivity-based limits.**

At its November 19, 1998, hearing the ARB adopted VOC limits that were to become effective on January 1, 2002. At that hearing, the Board also directed staff to return with a voluntary alternative reactivity-based compliance option for aerosol coatings. During development of the voluntary reactivity regulation proposal, staff and several representatives of the aerosol coating industry came to the conclusion that it was preferable to pursue replacing the VOC content limits with mandatory reactivity-based VOC limits. In reaching this conclusion, the industry indicated that reactivity-based VOC limits may provide more flexibility, yet still provide the same air quality benefit as the mass-based VOC limits. With agreement from the majority of the aerosol coating industry, staff proposed, and the Board adopted, the mandatory reactivity-based VOC limits.

The aerosol coatings regulation contains mass-based limits for 35 aerosol coating categories that specify the maximum allowable amount of VOC, on a percent-by-weight basis, that can be contained in an aerosol coating product. The adopted amendments replace the January 1, 2002, mass-based VOC limits for 35 aerosol coatings categories with equivalent reactivity-based limits. A definition and a reactivity limit for a 36th category, "Polyolefin Adhesion Promoters," was also added. The units of the limits are in grams of ozone per gram of product.

These adopted amendments recognize that each VOC has a different potential to form ozone once emitted. This concept is known as reactivity. By understanding the differences in VOCs' abilities to form ozone, an efficient control strategy can be established that, rather than limiting the total mass of VOCs, limits the amount of ozone produced by the VOCs. As the basis for setting reactivity limits, the maximum incremental reactivity (MIR) scale was adopted. To set the reactivity limits, staff quantified the expected ozone reductions that would have been achieved from implementation of the January 1, 2002, mass-based VOC limits and calculated a reactivity limit that ensures an equal ozone reduction benefit. The concepts of VOC photochemical reactivity were discussed in detail in the Initial Statement of Reasons (ISOR).

The adopted amendments also eliminate use of the emissions averaging provisions contained in the Alternative Control Plan (ACP) (sections 94540-94555, title 17, CCR). This is because the ACP is not currently designed to allow averaging based on ozone formation.

The adopted amendments extend the January 1, 2002, effective date to June 1, 2002, for the 6 general coating product categories, and to January 1, 2003, for the 30 specialty coating categories to provide sufficient time for manufacturers to comply with the amendments.

2. A number of amendments were adopted to implement the reactivity-based limits.

- The title of the regulation was changed to the “Regulation for Reducing the Ozone Formed from Aerosol Coating Product Emissions.” This title change reflects the change to a reactivity-based control strategy.
- A number of definitions were added to section 94521(a). These definitions are necessary to describe various reactivity-related terms used in the regulation.
- The use of methylene chloride, perchloroethylene, and trichloroethylene was prohibited after the effective date of the reactivity limits. These three chemicals have been identified as Toxic Air Contaminants.
- Section 94526, Test Methods was amended to specify that Method 310 would be used to determine aerosol coating ingredients. To aid in enforcement, the amendments require that, upon receiving written notice from the Executive Officer that products had been selected for compliance testing, the aerosol coating manufacturer would have 10 working days to supply formulation data, and any other information necessary to determine compliance.
- Finally, various other conforming changes were adopted that are necessary to integrate the new reactivity-based limits into the existing aerosol coatings regulation.

3. Adopt new Tables of MIR Values

To implement the regulation, a new subchapter, Subchapter 8.6, in title 17, CCR was adopted. New Subchapter 8.6, in sections 94700 and 94701, contains Tables of MIR Values that are used to set reactivity-based limits and determine compliance. The MIR scale was developed by Dr. William Carter at the University of California, Riverside. This scale is used to compare VOCs’ abilities to form ozone. The higher the MIR value, in grams ozone per gram of VOC, the more ozone a VOC has the potential to react to form in the atmosphere. More information on the use of the MIR scale was included in the ISOR.

4. Modify ARB Method 310

Amendments were also made to ARB Method 310 so that it can be used for determining compliance with the reactivity limits. These amendments allow

Method 310 to be used with manufacturers' formulation data to determine the amount and type of each reactive organic compound ingredient in an aerosol coating product. At present, Method 310 is used to determine the total VOC content in consumer products and aerosol coating products, and is incorporated by reference in sections 94506, 94515, and 94526, title 17, CCR.

Comparable Federal Regulations

There are no comparable regulations that establish VOC or reactivity-based limits for aerosol coatings.