

**SACRAMENTO METROPOLITAN
AIR QUALITY MANAGEMENT DISTRICT**

For Agenda of **October 27, 2011**

To: Board of Directors
Sacramento Metropolitan Air Quality Management District

From: Larry Greene
Executive Director/Air Pollution Control Officer

Subject: Adopt a Resolution Approving Amendments to Rule 101, General Provisions and Definitions

Recommendations

1. Conduct a public hearing; and
 2. Adopt the attached resolution approving the amendments to Rule 101.
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Executive Summary

Rule 101, General Provisions and Definitions, establishes general requirements and definitions that are applicable to all District rules and regulations. Since Rule 101 was last amended in 1998, the U.S. Environmental Protection Agency (EPA) has revised the federal definition of volatile organic compound (VOC)¹ to exempt eight additional compounds that negligibly contribute to the formation of ozone.

After reviewing the eight compounds, Staff proposes to exempt the following six compounds:

1. 1,1,1,2,2,3,3-heptafluoro-3-methoxy-propane (n-C₃F₇OCH₃ or HFE-7000)
2. 3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl) hexane (HFE-7500)
3. Methyl formate
4. 1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy-4-trifluoromethyl-pentane (HFE-7300)
5. Dimethyl carbonate
6. Propylene carbonate

Staff is not proposing to exempt the other two compounds: 1,1,1,2,3,3,3-heptafluoropropane (HFC-227ea) because it is a potent greenhouse gas and tertiary butyl acetate (TBAC) because it is a potential human carcinogen. Staff may recommend exempting TBAC in specific rules if TBAC is needed to formulate compliant products and the cancer risk of using TBAC-containing products in specific applications is less than significant. In August, your Board approved a limited exemption for TBAC in Rule 459, Automotive, Mobile Equipment, and Associated Parts and Components Coating Operations.

¹ 40 CFR 51.100(s)

Attachments

The following table identifies the attachments to this memo.

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Background

The District is a nonattainment area for both the state and federal ozone standards. Ground level ozone is a secondary pollutant formed from photochemical reactions of nitrogen oxides (NO_x) and VOC in the presence of sunlight. Ozone is a strong irritant that adversely affects human health and damages crops and other environmental resources. As documented by EPA in the 2006 Criteria Document for ozone, both short-term and long-term exposure to ozone can irritate and damage the human respiratory system, resulting in:

- decreased lung function;
- development and aggravation of asthma;
- increased risk of cardiovascular problems such as heart attacks and strokes;
- increased hospitalizations and emergency room visits; and
- premature deaths.

One of the strategies to control ozone pollution is to reduce VOC emissions. One method for complying with low VOC emission limits is through the use of organic compounds that do not significantly react to form ozone. These organic compounds are exempt from EPA's VOC definition and the District's VOC definition in Rule 101.

Summary of Proposed Rule Amendments

Staff is proposing to amend Rule 101 to incorporate the following compounds into the list of exempt compounds in Section 204: HFE-7000, HFE-7500, methyl formate, HFE-7300, dimethyl carbonate, and propylene carbonate. Staff has determined that these compounds will not adversely impact human health or the environment.

Staff is also proposing minor changes that add the common names for two compounds already included in Rule 101: HFE-7100 for 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane (C₄F₉OCH₃), and HFE-7200 for 1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane (C₄F₉OC₂H₅).

Staff is not proposing to exempt HFC-227ea because it has a global warming potential (GWP) of 3,800² and could be used to replace other compounds with lower GWPs. This compound

² The GWP is the ratio of the warming caused by one kilogram of a substance to the warming caused by one kilogram of carbon dioxide (CO₂). The GWP of CO₂ is 1. The GWP of HFC-227ea is 3800 times greater than CO₂.

could potentially have an adverse impact on the environment.

Staff is also not proposing to exempt TBAC because the state Office of Environmental Health Hazard Assessment (OEHHA) has determined that it is a potential human carcinogen. TBAC metabolizes to tertiary butyl alcohol (TBA), and TBA is potential human carcinogen that may result in a cancer risk to humans. OEHHA developed an interim inhalation unit risk factor for TBAC in order to evaluate the potential cancer risk. Staff used this factor and performed a health risk assessment which evaluated the potential cancer risk to nearby receptors. The health risk assessment showed that TBAC could be emitted in quantities that would exceed the acceptable cancer risk threshold. Therefore, Staff is not proposing to add TBAC to the District's list of exempt compounds. Instead, Staff will evaluate TBAC on a rule-by-rule basis to determine the need to exempt TBAC for specific applications and the potential health impact of TBAC to nearby receptors. If TBAC is needed to formulate compliant products and the health impact is less than significant, Staff may propose exempting TBAC within specific rules. For example, Rule 459, Automotive, Mobile Equipment, and Associated Parts and Products Coating Operations, exempts TBAC when it is contained in an automotive coating that is applied only within a spray booth. The limited exemption for TBAC was allowed in Rule 459 because the health risk assessment showed that the potential increase use of TBAC-containing coatings in spray booths will not exceed the cancer risk threshold.

Impact on Businesses

The proposed amendments to the rule do not establish new emission standards. The exemption for the six compounds will provide greater flexibility for product manufacturers and other businesses in meeting VOC emission limits.

District Impacts

The proposed amendments to the rule are not expected to result in additional costs to the District.

Emission Impacts

None. The proposed amendments exempt six compounds that negligibly contribute to the formation of ozone and, therefore, will not adversely affect air quality.

Environmental Review and Compliance

California Public Resources Code Section 21159 requires an environmental analysis of the reasonably foreseeable methods of compliance. Proposed amendments to Rule 101 will add six organic compounds to the list of exempt compounds and will not establish emission limitations; however, these compounds may be used to comply with VOC limits in other District rules. Staff reviewed the six compounds and determined that the compounds have negligible or zero ODPs. Also, each compound with a low GWP could be used to replace other organic compounds with higher GWPs. Where the compounds have toxicity concerns, Staff performed health risk assessments to ensure that the potential increased use of the compounds will not cause an adverse impact to nearby receptors.

Staff finds that the proposed rule amendments are exempt from CEQA because it can be seen with certainty that there is no possibility that the activity in question may have a significant adverse effect on the environment³.

Public Outreach and Comments

Staff held a public workshop to discuss the proposed Rule 101 amendments on September 16, 2010. The noticing for the workshop included:

- Mailing and/or e-mailing notices to:
 - interested and affected parties, including all potentially affected permitted stationary sources;
 - industry associations, coating manufacturers and distributors; and
 - all persons who have requested rulemaking notices.
- A notice in the "Our Region" section of the Sacramento Bee.
- A notice on the District web site with a link to the draft rule and staff report.

Staff received comments and questions at the public workshop, as well as written comments from chemical manufacturers and distributors, coating manufacturers and distributors, and a coating association. CARB and EPA reviewed the proposed amendments, and EPA had an editorial comment. All comments and responses to comments are included in Appendix C of the Staff Report (Attachment C).

Primarily, the public comments requested that the District exempt TBAC as a VOC. As discussed above in the Summary of Proposed Rule Amendments Section, TBAC is a potential human carcinogen. Staff performed a health risk assessment using OEHHA's interim inhalation unit risk factor. From the health risk assessment, Staff determined that TBAC could be used in quantities that exceed the District's acceptable threshold level for cancer risk. As such, Staff is not proposing to exempt TBAC as a VOC for all uses in the District but will assess an exemption for TBAC on a rule-by-rule basis.

A legal notice for this public hearing was published in the Sacramento Bee on September 26, 2011. The notice was also mailed and/or e-mailed to attendees of the public workshop, all interested and affected parties, and all persons who requested rulemaking notices.

³ State CEQA Guidelines, Section 15061(b)(3).

Conclusion

Staff proposes amendments to Rule 101 to exempt six compounds from the District's VOC definition because they negligibly react to form ozone and will allow manufacturers and other businesses to reformulate or switch products to meet current and future VOC limits in District rules. The proposed amendments do not exempt two compounds because of their GWP and potential cancer risks. Staff recommends that the Board adopt the attached resolution approving the amendments to Rule 101 as proposed.

Respectfully submitted,

Approved as to form:

Larry Greene
Executive Director/Air Pollution Control Officer

Kathrine Pittard
District Counsel

Attachments