

MDEQ REVISES DEFINITION OF VOLATILE ORGANIC COMPOUND

The Michigan Department of Environmental Quality (MDEQ) has adopted revisions to the regulatory definition of “volatile organic compound” or “VOC” under its air quality regulations. The revisions are intended to make the definition consistent with the United States Environmental Protection Agency (EPA) definition of VOC. This definition is relevant to numerous regulations and permits that regulate emissions of VOCs. VOCs are regulated because they react with sunlight and other chemicals in the atmosphere to form ozone/smog.

Previously, VOC was defined as “any compound of carbon. . . . that participates in photochemical reactions, excluding the following materials, all of which do not contribute appreciably to the formation of ozone:” The definition included 54 different chemicals and classes of chemicals that are compounds of carbon but do not contribute to the formation of ozone/smog.

The revisions make numerous changes to the definition of VOC. First, the revisions eliminate the provision that excluded “ingredient compounds in materials other than surface coatings that have a vapor pressure less than or equal to 0.1 millimeters of mercury at the temperature at which they are used.” Vapor pressure is a measure of how readily a substance evaporates and materials that have a low vapor pressure (e.g. 0.1 millimeters of mercury) are relatively non-volatile and do not readily evaporate. These substances include detergents and plastics. According to MDEQ, EPA objected to this provision of MDEQ’s definition of VOC for Michigan’s Clean Air Act State Implementation Plan because EPA does not recognize a low vapor pressure exemption and this provision is, therefore, inconsistent with EPA policy.

Second, the revisions eliminate a provision that allowed MDEQ to approve alternative test methods for measuring VOC if the previously approved methods do not result in accurate or

reliable results in a specific situation. According to MDEQ, EPA objected to this provision because it provides too much discretion to MDEQ. In response to negative comments when the revisions to the definition of VOC were proposed, MDEQ added language to the final rule to state that if an approved VOC test method also measures compounds with negligible photochemical reactivity, those negligibly photochemically reactive compounds may be excluded from the test results if the amount of such compounds can be accurately quantified and the exclusion is approved by MDEQ.

Third, in response to comments from the public, MDEQ added a new provision excluding methylene chloride from the definition of VOC. Methylene chloride, which is used in pharmaceutical manufacturing and other industries, has been excluded from the federal definition of VOC since the 1970s because it does not participate in the formation of ozone/smog. Nonetheless, until now, Michigan elected not to exclude methylene chloride from the state definition of VOC because of concerns about the possible toxic effects of methylene chloride in the atmosphere.

Over the past 20 years, numerous state and federal regulations have been developed specifically to address potentially toxic air contaminants, including regulations that target methylene chloride emissions. Therefore, because the definition of VOC and the regulations that rely on the definition of VOC are intended to regulate chemicals that create ozone/smog and are not designed to address the types of toxic effects potentially caused by methylene chloride, MDEQ has determined that it is no longer necessary to include methylene chloride in the definition of VOC.

The new definition of VOC took effect on March 13, 2003. 2003 MR.

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