6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 51

[FRL - 5992-4]
RIN 2060-AH27

Air Quality: Revision to Definition of Volatile Organic Compounds - Exclusion of Methyl Acetate

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action revises EPA's definition of volatile organic compounds (VOC) for purposes of preparing State implementation plans (SIP's) to attain the national ambient air quality standards (NAAQS) for ozone under title I of the Clean Air Act (Act) and for any Federal implementation plan (FIP) for an ozone nonattainment area. This revision adds methyl acetate to the list of compounds excluded from the definition of VOC on the basis that this compound has negligible contribution to tropospheric ozone formation. This compound has potential for use as a solvent in paints, inks and adhesives.

DATES: This rule is effective [Insert date 30 days from date of publication in the **Federal Register**].

ADDRESSES: The EPA has established a public docket for this action, A-97-32, which is available for public inspection and copying between 8 a.m. and 4 p.m., Monday through Friday, at EPA's Air and Radiation Docket and Information

Center (6102), 401 M Street, SW, Washington, DC 20460. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: William Johnson, Office of Air Quality Planning and Standards, Air Quality Strategies and Standards Division (MD-15), Research Triangle Park, NC 27711, phone (919) 541-5245.

SUPPLEMENTARY INFORMATION:

Regulated entities. Entities potentially regulated by this action are those which use and emit VOC and States which have programs to control VOC emissions.

Category	Examples of regulated entities
Industry	Industries that manufacture and use paints, inks and adhesives
States	States which have regulations to control volatile organic compounds

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. This table lists the types of entities that EPA is now aware could potentially be regulated by this action. Other types of entities not listed in the table could also be regulated. If you have questions regarding the applicability of this action to a

particular entity, consult the person listed in the preceding "FOR FURTHER INFORMATION CONTACT" section.

I. Background

On July 30, 1996, Eastman Chemical Company submitted a petition to the EPA which requested that methyl acetate be added to the list of compounds which are considered to be negligibly reactive in the definition of VOC at 40 CFR 51.100(s). The petitioner based the request on a comparison of the reactivity of methyl acetate to that of ethane which has been listed since 1977 as having negligible reactivity. In a number of cases in the past, EPA has accepted compounds with lower reactivity than ethane as negligibly reactive (see, e.g., 61 FR 4588 (February 7, 1996), 61 FR 52848 (October 8, 1996), and 62 FR 44900 (August 25, 1997)).

As indicated in the proposal, a study was performed comparing the reactivity of methyl acetate to ethane on a "per gram" basis. The EPA also calculated the results of this study on a "per mole" basis.[1] Under both sets of

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[1] The EPA has evaluated most VOC exemption considerations in the past using k_{OH} values expressed in units of cm^3 $molecule^{-1}$ sec^{-1} which is consistent with a per mole basis. However, in one recent case, EPA examined a reactivity petition solely on a weight or "per gram" basis (60 FR 31633 (June 16, 1995) (exempting acetone from the definition of VOC)). The use of a reactivity per mole basis is a more strict basis for comparison to the reactivity of ethane for compounds whose molecular weight is greater than ethane.

tests, the reactivity of methyl acetate was comparable to or less than that for ethane. Based on these results, EPA concluded that existing scientific evidence does not support a methyl acetate reactivity higher than that of ethane. Therefore, EPA proposed on August 25, 1997 (62 FR 44926) to add methyl acetate to the list of negligibly reactive compounds in EPA's definition of VOC found in 40 CFR 51.100(s). The proposal provided for a 30-day public comment period.

II. Comments on the Proposal and EPA Response

In the proposal for today's action, EPA indicated that interested persons could request that EPA hold a public hearing on the proposed action (see section 307(d)(5)(ii) of the Act). There were no requests for a public hearing.

The EPA received written comments on the proposal from four organizations. The comments were from the petitioner, one industry trade association, and two manufacturing companies. Two commenters supported the action, one opposed the action, and one commenter raised the issue of banked credits for previous reductions in methyl acetate. Copies of these comments have been added to the docket (A-97-32)

Given the relatively low molecular weight of ethane, use of the per gram basis tends to result in more compounds falling into the "negligibly reactive" class. Because methyl acetate is less reactive than ethane based on a per mole basis, EPA is not addressing today whether it should continue to exempt compounds based on a per gram basis.

for this action. Substantial comments and EPA's responses are listed below.

Comment: One commenter found the proposed exclusion troubling as they understood that EPA is reconsidering the method for determining photochemical reactivity of VOC and the baseline used to determine negligible reactivity.

Response: The EPA is beginning a process of evaluating its reactivity policy in view of scientific information which has been gained since 1977 when the VOC policy was first published. This evaluation process, which will involve model development, modeling studies and collection of new information, is expected to take several years. However, the EPA has decided to proceed with approving the methyl acetate petition now even though the Agency is anticipating a review of its reactivity policy. Methyl acetate shows reactivity comparable to ethane on a per mole basis. There is currently no valid scientific support for not exempting this compound at this time, and the commenter has not provided the Agency with an adequate scientific basis for not exempting methyl acetate.

Comment: One commenter stated that fundamental organic photochemistry and oxidation chemistry imply that methyl acetate will contribute to the photochemical generation of ozone in the troposphere. Specifically, the photolysis of

methyl acetate caused by the light absorption at wavelengths up to about 230 nanometers (nm) would result in the production of radicals and should be an efficient photochemical process. The commenter further states that methyl acetate may absorb energy and transfer this energy to other molecules to form radicals.

Response: The commenter's claim that methyl acetate participates in atmospheric photochemical reactions by virtue of light absorption at wavelengths up to about 230 nm and photolysis into free radicals is contrary to current understanding of photolytic processes occurring in the atmosphere. Specifically, the photolytic activity attributed by the commenter to methyl acetate can occur outside but not inside the troposphere. It is a well known fact that, inside the troposphere, photolysis of chemical compounds is restricted to the wavelength region above 290 nm. Furthermore, the study of methyl acetate by Dr. William P.L. Carter of the University of California at Riverside, which was submitted with the petition, did not result in evidence of any effects due to photolysis. Finally, Dr. Carter's results and conclusion were supported by smog chamber data obtained by a competent experimentalist, and were agreed with by a reactivity expert peer reviewer. Such experimental and peer review support of

a reactivity measurement are accepted by the reactivity scientific community as being reliable, and, therefore, justify EPA’s decision to accept the measurement result.

Comment: A commenter stated that ethane is unreactive in radical reactions, that ethane is not usually used in chemical feedstocks, and that methyl acetate is easily destroyed using catalytic oxidation, while ethane is not.

Response: The evidence for methyl acetate’s low reactivity reported in Dr. Carter's study indicates that the items in this comment are not significant when comparing the photochemical reactivity of methyl acetate to that of ethane.

Comment: One commenter expressed concern that the exclusion of methyl acetate as a VOC will have a deleterious effect on netting, offsetting and trading of existing emissions reduction "credits" at their facilities that have already made substantial reductions in methyl acetate emissions over the past few years. At the time they made the reductions, they did so with the understanding that they could be applied to future expansions at their facilities or could be used for trading and/or offsetting. They are concerned that EPA’s proposal might be interpreted as

obviating these emissions credits.

Response: This is an important concern, but it should not determine whether a compound, such as methyl acetate, is recognized as being negligibly reactive. This decision should rest only on the scientific evidence of the photochemical reactivity of the compound. How to treat banked credits of a compound that has subsequently been determined to be negligibly reactive and not to be counted toward VOC reductions in the future is an issue that transcends this methyl acetate action alone. The EPA's current policy is to allow States to decide how they will handle situations within their jurisdictions in a case-by-case manner.

III. Final Action

Today's action is based on EPA's review of the material in Docket No. A-97-32. The EPA hereby amends its definition of VOC at 40 CFR 51.100(s) to exclude methyl acetate as a VOC for ozone SIP and ozone control for purposes of attaining the ozone national ambient air quality standard. The revised definition also applies for purposes of any Federal implementation plan for ozone nonattainment areas (e.g., 40 CFR 52.741(a)(3)). States are not obligated to exclude from control as a VOC those compounds that EPA has found to be negligibly reactive. However, States should not

include these compounds in their VOC emissions inventories for determining reasonable further progress under the Act (e.g., section 182(b)(1)) and should not take credit for controlling these compounds in their ozone control strategy. EPA, however, urges States to continue to inventory the emissions of methyl acetate for use in photochemical modeling to assure that such emissions are not having a significant effect on ambient ozone levels.

IV. Administrative Requirements

A. Docket

The docket is an organized and complete file for all information submitted or otherwise considered by EPA in the development of this rulemaking. The principle purposes of the docket are: (1) To allow interested parties to identify and locate documents so that they can effectively participate in the rulemaking process; and, (2) to serve as the record in case of judicial review (except for interagency review materials) (section 307(d)(7)(A)).

B. Executive Order 12866

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the Agency must determine whether a regulatory action is "significant" and therefore subject to Office of Management and Budget (OMB) review and the requirements of this Executive Order. The Order defines "significant

regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligation of recipients thereof; or

(4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this rule is not "significant" because none of the listed criteria apply to this action. Consequently, this action was not submitted to OMB for review under Executive Order 12866.

C. Unfunded Mandates Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Pub.L. 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private

sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any 1 year. Before promulgation of an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost effective, or least burdensome alternative that achieves the objective of the rule, unless EPA publishes with the final rule an explanation of why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments including tribal governments, it must have developed under section 203 of the UMRA a small government plan which informs, educates and advises small governments on compliance with the regulatory requirements. Finally, section 204 provides that for any proposed or final rule that imposes a mandate on a State, local or tribal government of $100 million or more annually, the Agency must provide an opportunity for such governmental entities to provide input in development of the rule.

Since today's rulemaking is deregulatory in nature and

does not impose any mandate on governmental entities or the private sector, EPA has determined that sections 202, 203, 204 and 205 of the UMRA do not apply to this action.

D. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) of 1980 requires the identification of potentially adverse economic impacts of Federal regulations upon small business entities. The Act specifically requires the completion of an RFA analysis in those instances where the regulation would impose a substantial economic impact on a significant number of small entities. The RFA analysis is for the purpose of determining the economic impact imposed by the terms of the regulation being adopted. Because this rule is deregulatory in nature, no economic impacts are imposed by its terms. Therefore, because this rulemaking imposes no adverse economic impacts within the meaning of the RFA, an analysis has not been conducted. Pursuant to the provision of 5 U.S.C. 605(b), I hereby certify that this rule will not have a significant impact on a substantial number of small entities because no additional costs will be incurred.

E. Paperwork Reduction Act

This rule does not change any information collection requirements subject to OMB under the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 et seq.

F. Submission to Congress and the General Accounting Office

Under 5 U.S.C. 801(a)(1)(A) as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of he General Accounting Office prior to publication of the rule in today's **Federal Register**. This rule is not a "major rule" as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 51

Environmental protection, Administrative practice and procedure, Air pollution control, Carbon monoxide, Intergovernmental relations, Lead, Nitrogen dioxide, Ozone, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides, Volatile organic compounds.

Dated:

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Carol M. Browner

Administrator

For reasons set forth in the preamble, part 51 of chapter I of title 40 of the Code of Federal Regulations is amended as follows:

Part 51-REQUIREMENTS FOR PREPARATION, ADOPTION, AND SUBMITTAL OF IMPLEMENTATION PLANS.

1. The authority citation for part 51 continues to read as follows:

Authority: 42 U.S.C. 7401-7641q

2. Section 51.100 is amended by revising paragraph (s)(1) to read as follows:

§ 51.100 Definitions.

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(s) *Volatile organic compounds (VOC)* means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions.

(1) This includes any such organic compound other than the following, which have been determined to have negligible photochemical reactivity: methane; ethane; methylene chloride (dichloromethane); 1,1,1-trichloroethane (methyl chloroform); 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113); trichlorofluoromethane (CFC-11);

dichlorodifluoromethane (CFC-12); chlorodifluoromethane (HCFC-22); trifluoromethane (HFC-23); 1,2-dichloro 1,1,2,2-tetrafluoroethane (CFC-114); chloropentafluoroethane (CFC-115); 1,1,1-trifluoro 2,2-dichloroethane (HCFC-123); 1,1,1,2-tetrafluoroethane (HFC-134a); 1,1-dichloro 1-fluoroethane (HCFC-141b); 1-chloro 1,1-difluoroethane (HCFC-142b); 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124); pentafluoroethane (HFC-125); 1,1,2,2-tetrafluoroethane (HFC-134); 1,1,1-trifluoroethane (HFC-143a); 1,1-difluoroethane (HFC-152a); parachlorobenzotrifluoride (PCBTF); cyclic, branched, or linear completely methylated siloxanes; acetone; perchloroethylene (tetrachloroethylene); 3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca); 1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb); 1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC 43-10mee); difluoromethane (HFC-32); ethylfluoride (HFC-161); 1,1,1,3,3,3-hexafluoropropane (HFC-236fa); 1,1,2,2,3-pentafluoropropane (HFC-245ca); 1,1,2,3,3-pentafluoropropane (HFC-245ea); 1,1,1,2,3-pentafluoropropane (HFC-245eb); 1,1,1,3,3-pentafluoropropane (HFC-245fa); 1,1,1,2,3,3-hexafluoropropane (HFC-236ea); 1,1,1,3,3-pentafluorobutane (HFC-365mfc); chlorofluoromethane (HCFC-31); 1 chloro-1-fluoroethane (HCFC-151a); 1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a); 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane ($C_4F_9OCH_3$); 2-

(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane ($(CF_3)_2CFCF_2OCH_3$); 1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane ($C_4F_9OC_2H_5$); 2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane ($(CF_3)_2CFCF_2OC_2H_5$); methyl acetate and perfluorocarbon compounds which fall into these classes:

(i) Cyclic, branched, or linear, completely fluorinated alkanes;

(ii) Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

(iii) Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

(iv) Sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

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