

U.S. ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 51

[FRL-5466-9]

Air Quality: Revision to Definition of Volatile Organic Compounds - Exclusion of HFC 43-10mee and HCFC 225ca and cb

AGENCY : Environmental Protection Agency (EPA).

ACTION : Proposed rule.

SUMMARY : This action proposes to revise 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 the Federal implementation plan (FIP) for the Chicago ozone nonattainment area. This proposed revision would add HFC 43-10mee and HCFC 225ca and cb to the list of compounds excluded from the definition of VOC on the basis that these compounds have negligible contribution to tropospheric ozone formation.

DATES : Comments on this proposal must be received by May 31, 1996. Requests for a hearing must be submitted by May 31, 1996.

ADDRESSES : Comments should be submitted in duplicate (if possible) to: Air and Radiation Docket and Information Center (6102), Attention: Docket No. A-95-37, U.S.

Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460. Comments should be strictly limited to the subject matter of this proposal, the scope of which is discussed below.

Public Hearing: If anyone contacts EPA requesting a public hearing, it will be held at Research Triangle Park, North Carolina. Persons wishing to request a public hearing, wanting to attend the hearing, or wishing to present oral testimony should notify Mr. William Johnson, Air Quality Strategies and Standards Division (MD-15), Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone (919) 541-5245. The EPA will publish notice of a hearing, if requested, in the Federal Register. Any hearing will be strictly limited to the subject matter of the proposal, the scope of which is discussed below. This action is subject to the procedural requirements of section 307(d)(1)(B), (J), and (U) of the Act, and 42 U.S.C. § 7607(d)(1)(B), (J), and (U). Therefore, EPA has established a public docket for this action, A-95-37, 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.

Interested persons may call Mr. Johnson to see if a hearing will be held and the date and location of any hearing.

SUPPLEMENTARY INFORMATION :

I. Background

Petitions have been received from two organizations asking for certain compounds to 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). On December 12, 1994, Asahi Glass America, Inc., submitted a petition for HCFC 225 ca and cb isomers. These compounds are chemically named 3,3-dichloro-1,1,1,2,2-pentafluoropropane (CAS number 422-56-0) and 1,3-dichloro-1,1,2,2,3-pentafluoropropane (CAS number 507-55-1), respectively. On March 13, 1995, the E.I. du Pont de Nemours and Company submitted a petition for the compound HFC 43-10mee. This compound has the chemical name

1,1,1,2,3,4,4,5,5,5-decafluoropentane (CAS number 138495-42-8).

In support of their petitions, these organizations supplied information on the photochemical reactivity of the individual compounds. This information consisted mainly of the rate constant for the reaction of the compound with the hydroxyl (OH) radical. This rate constant (k_{OH} value) is commonly used as one measure of the photochemical reactivity of compounds. The petitioners compared the rate constants with that of other compounds which have already been listed as photochemically, negligibly reactive (e.g., ethane which is the compound with the highest k_{OH} value that is currently regarded as negligibly reactive). The compounds for which petitions were submitted are listed in Table 1 along with their reported k_{OH} rate constants.

Table 1 - Reaction Rate Constants with OH Radical

<u>Compound</u>	<u>Reported Rate Constant at 25 °C</u> <u>cm³/molecule/sec</u>
ethane	2.4×10^{-13}
HCFC-225ca	2.5×10^{-14}
HCFC-225cb	8.6×10^{-15}
HFC 43-10mee	3.87×10^{-15}

The scientific information which the petitioners have submitted in support of their petitions has been added to the docket for this rulemaking. This information includes references for the journal articles where the rate constant values are published.

II. The EPA Response to the Petitions

In regard to the petition for HCFC 225ca and HCFC 225cb, existing data support that the reactivities of these compounds with respect to reaction with OH radicals in the atmosphere are considerably lower than that of ethane. This would indicate that these compounds are less reactive than ethane which is already classified as negligibly reactive. Similarly, for HFC 43-10mee, the rate constant of reaction with the OH radical is considerably less than that for ethane.

In each of the above petitions, the petitioners did not submit reactivity data with respect to other VOC loss reactions (such as reaction with O-atoms, nitrogen trioxide (NO_3)-radicals, and ozone $\text{O}(\text{O}_3)$, and for photolysis). However, there is ample evidence in the literature that halogenated paraffinic VOC, such as these compounds, do not participate in such reactions significantly.

The EPA is responding to these petitions by proposing, in this notice, to add HFC 43-10mee and HCFC 225ca and cb to the list of compounds appearing in 40 CFR 51.100(s).

III. Final Action

Today's proposed action is based on EPA's review of the material in Docket No. A-95-37. The EPA hereby proposes to amend its definition of VOC at 40 CFR 51.100(s) to exclude HCFC 43-10mee, HCFC 225ca and HCFC 225cb as VOC for ozone SIP and ozone control purposes. The revised definition will apply in the Chicago ozone nonattainment area pursuant to the 40 CFR 52.741(a)(3) definition of volatile organic material or VOC. States are not obligated to exclude from control as a VOC those compounds that EPA has found to be negligibly reactive. However, if this action is made final, 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 may not take credit for controlling these compounds in their ozone control strategy.

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 proposed 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

Section 202 of the Unfunded Mandates Reform Act of 1995

(Unfunded Mandates Act) (signed into law on March 22, 1995) requires that the Agency prepare a budgetary impact statement before promulgating a rule that includes a Federal mandate that may result in expenditure by State, local, and tribal governments, in aggregate, or by the private sector of \$100 million or more in any 1 year.

Section 204 requires the Agency to establish a plan for obtaining input from and informing, educating, and advising any small governments that may be significantly or uniquely affected by the rule.

Under section 205 of the Unfunded Mandates Act, the Agency must identify and consider a reasonable number of regulatory alternatives before promulgating a rule for which a budgetary impact statement must be prepared. The Agency must select from those alternatives the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule, unless the Agency explains why this alternative is not selected or the selection of this alternative is inconsistent with law.

Because this proposed rule is estimated to result in the expenditure by State, local and tribal governments or the private sector of less than \$100 million in any 1 year, the Agency has not prepared a budgetary impact statement or specifically addressed the selection of the least costly, most cost-effective, or least burdensome alternative. Because small governments will not be significantly or uniquely affected by this rule, the Agency is not required to develop a plan with regard to

small governments.

D. Regulatory Flexibility Act

For proposed and final rules, the Regulatory Flexibility Act of 1980 requires the Agency to perform a regulatory flexibility analysis, identifying the economic impact of the rule on small entities. 5 U.S.C. § 601 et. seq. In the alternative, if the Agency determines that the rule will not have a significant economic impact on a substantial number of small entities, the Agency can make a certification to that effect. Because this rule relieves a restriction, it will not impose and any adverse economic impact on small entities. Therefore, pursuant to 5 U.S.C. § 605(b), I hereby certify that this action will not have a

Revision to Definition of VOC Page 9 of 11

significant economic impact on a substantial number of small entities because it relaxes current regulatory requirements rather than imposing new ones.

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.

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: April 25, 1996.

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 proposed to be 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 proposed to be amended by revising paragraphs (s) introductory text and (s)(1) introductory text to read as follows:

51.100 Definitions.

* * * * *

(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);
and perfluorocarbon compounds which fall into these
classes:

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