

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 : 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 the Federal implementation plan (FIP) for the Chicago ozone nonattainment area. This action adds 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. These compounds are solvents which could be used in electronics and precision cleaning.

DATE : This rule is effective November 7, 1996.

ADDRESSES : The 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.

SUPPLEMENTARY INFORMATION :

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

<u>Category</u>	<u>Examples of regulated entities</u>
Industry	Industries that do solvent cleaning, e.g. electronics or precision cleaning
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 affected by State regulation initiated pursuant to this action. States may use this revised definition of

VOC in promulgating new or revising existing reasonably available control technology requirements for stationary sources. If you have further questions regarding the applicability of this action to a particular entity, you may consult the person listed in the "For Further Information Contact" section of this notice or contact your State or local air pollution control agency.

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 225ca 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). Reported k_{OH} rate constants for ethane and the compounds for which petitions were submitted are listed in Table 1.

Table 1 - Reaction Rate Constants with OH Radical

Reported Rate Constant at 25 °C

<u>Compound</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.

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 (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.

II. Comments on the Proposal and EPA Responses

Based on a review of the scientific material submitted by the petitioners, EPA published a notice in

the Federal Register on May 1, 1996 (61 FR 19231) which proposed to revise EPA's definition of VOC to add HFC 43-10mee and HCFC 225ca and cb to the list of compounds which are considered to be negligibly photochemically reactive. In the proposal, EPA summarized the technical basis for its preliminary decision to add these compounds to this list. That notice asked for comments from the public on the proposal and provided a 30-day comment period which ended May 31, 1996.

In accordance with section 307(d) of the Act, today's action is accompanied by a response to the significant comments, criticisms, and new data submitted in written or oral presentations during the public comment period. During the comment period, written comments were received from one company in response to EPA's May 1, 1996 proposal. This comment letter supported the proposed action. A copy of that comment letter is located in the docket (A-95-37) for this action.

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). During the comment period, no one requested a public hearing, therefore none was held.

III. Final Action

Based on its review of the material in Docket No. A-95-37, the EPA hereby amends 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 also applies 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, 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 rulemaking. The principle purposes of the docket are to allow interested parties to identify

and locate documents so that they can effectively participate in the rulemaking process and 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 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 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.

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 the 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

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) introductory text and (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); 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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