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40 CFR Parts 9 and 82  
Protection of Stratospheric Ozone: Listing  
of Substitutes for Ozone-Depleting  
Substances; Final Rule

**ENVIRONMENTAL PROTECTION AGENCY****40 CFR Parts 9 and 82**

[FRL-5635-9]

RIN 2060-AG12

**Protection of Stratospheric Ozone: Listing of Substitutes for Ozone-Depleting Substances**

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

**SUMMARY:** This action imposes restrictions or prohibitions on substitutes for ozone depleting substances (ODS) under the U.S. Environmental Protection Agency (EPA) Significant New Alternatives Policy (SNAP) program. SNAP implements section 612 of the amended Clean Air Act of 1990 which requires EPA to evaluate and regulate substitutes for the ODS to reduce overall risk to human health and the environment. Through these evaluations, SNAP generates lists of acceptable and unacceptable substitutes for each of the major industrial use sectors. The intended effect of the SNAP program is to expedite movement away from ozone depleting compounds while avoiding a shift into high-risk substitutes posing other environmental problems.

On March 18, 1994, EPA promulgated a final rulemaking setting forth its plan for administering the SNAP program, and issued decisions on the acceptability and unacceptability of a number of substitutes. In this Final Rule (FR), EPA is issuing its decisions on the acceptability of certain substitutes not previously reviewed by the Agency. To arrive at determinations on the acceptability of substitutes, the Agency completed a cross-media evaluation of risks to human health and the environment by sector end-use.

**EFFECTIVE DATE:** November 15, 1996.

**ADDRESSES:** Public Docket: Comments and data are available in Docket A-91-42, Central Docket Section, South Conference Room 4, U.S. Environmental Agency, 401 M Street, SW., Washington, DC 20460. The docket may be inspected between 8 a.m. and 4:00 p.m. on weekdays. Telephone (202) 260-7549; fax (202) 260-4400. As provided in 40 CFR part 2, a reasonable fee may be charged for photocopying.

**FOR FURTHER INFORMATION CONTACT:** Carol Weisner at (202) 233-9193 or fax (202) 233-9665, Stratospheric Protection Division, USEPA, Mail Code

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**SUPPLEMENTARY INFORMATION:****I. Overview of This Action**

This action is divided into five sections, including this overview:

- I. Overview of This Action
- II. Section 612 Program
  - A. Statutory Requirements
  - B. Regulatory History
- III. Listing of Substitutes
- IV. Administrative Requirements
- V. Submission to Congress and the General Accounting Office
- VI. Additional Information
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**II. Section 612 Program****A. Statutory Requirements**

Section 612 of the Clean Air Act authorizes EPA to develop a program for evaluating alternatives to ozone-depleting substances. EPA refers to this program as the Significant New Alternatives Policy (SNAP) program. The major provisions of section 612 are:

- **Rulemaking**—Section 612(c) requires EPA to promulgate rules making it unlawful to replace any class I (chlorofluorocarbon, halon, carbon tetrachloride, methyl chloroform, methyl bromide, and hydrobromofluorocarbon) or class II (hydrochlorofluorocarbon) substance with any substitute that the Administrator determines may present adverse effects to human health or the environment where the Administrator has identified an alternative that (1) reduces the overall risk to human health and the environment, and (2) is currently or potentially available.

- **Listing of Unacceptable/Acceptable Substitutes**—Section 612(c) also requires EPA to publish a list of the substitutes unacceptable for specific uses. EPA must publish a corresponding list of acceptable alternatives for specific uses.

- **Petition Process**—Section 612(d) grants the right to any person to petition EPA to add a substitute to or delete a substitute from the lists published in accordance with section 612(c). The Agency has 90 days to grant or deny a petition. Where the Agency grants the petition, EPA must publish the revised lists within an additional six months.

- **90-day Notification**—Section 612(e) requires EPA to require any person who produces a chemical substitute for a class I substance to notify the Agency not less than 90 days before new or existing chemicals are introduced into interstate commerce for significant new uses as substitutes for a class I substance. The producer must also provide the Agency with the producer's unpublished health and safety studies on such substitutes.

- **Outreach**—Section 612(b)(1) states that the Administrator shall seek to maximize the use of federal research facilities and

resources to assist users of class I and II substances in identifying and developing alternatives to the use of such substances in key commercial applications.

- **Clearinghouse**—Section 612(b)(4) requires the Agency to set up a public clearinghouse of alternative chemicals, product substitutes, and alternative manufacturing processes that are available for products and manufacturing processes which use class I and II substances.

**B. Regulatory History**

On March 18, 1994, EPA published the Final Rulemaking (FRM) (59 FR 13044) which described the process for administering the SNAP program and issued EPA's first acceptability lists for substitutes in the major industrial use sectors. These sectors include: refrigeration and air conditioning; foam blowing; solvent cleaning; fire suppression and explosion protection; sterilants; aerosols; adhesives, coatings and inks; and tobacco expansion. These sectors comprise the principal industrial sectors that historically consume large volumes of ozone-depleting compounds.

The Agency defines a "substitute" as any chemical, product substitute, or alternative manufacturing process, whether existing or new, that could replace a class I or class II substance. Anyone who produces a substitute must provide the Agency with health and safety studies on the substitute at least 90 days before introducing it into interstate commerce for significant new use as an alternative. This requirement applies to chemical manufacturers, but may include importers, formulators or end-users when they are responsible for introducing a substitute into commerce.

**III. Listing of Substitutes**

To develop the lists of unacceptable and acceptable substitutes, EPA conducts screens of health and environmental risks posed by various substitutes for ozone-depleting compounds in each use sector. The outcome of these risk screens can be found in the public docket.

Under section 612, the Agency has considerable discretion in the risk management decisions it can make in SNAP. The Agency has identified five possible decision categories: acceptable, acceptable subject to use conditions; acceptable subject to narrowed use limits; unacceptable; and pending. Acceptable substitutes can be used for all applications within the relevant sector end-use. Conversely, it is illegal to replace an ODS with a substitute listed by SNAP as unacceptable for that

end-use. A pending listing represents substitutes for which the Agency has not received complete data or has not completed its review of the data.

After reviewing a substitute, the Agency may make a determination that a substitute is acceptable only if certain conditions of use are met to minimize risks to human health and the environment. Such substitutes are placed on the acceptable subject to use conditions lists. Use of such substitutes in ways that are inconsistent with such use conditions renders these substitutes unacceptable.

Even though the Agency can restrict the use of a substitute based on the potential for adverse effects, it may be necessary to permit a narrowed range of use within a sector end-use because of the lack of alternatives for specialized applications. Users intending to adopt a substitute acceptable with narrowed use limits must ascertain that other acceptable alternatives are not technically feasible. Companies must document the results of their evaluation, and retain the results on file for the purpose of demonstrating compliance. This documentation shall include descriptions of substitutes examined and rejected, processes or products in which the substitute is needed, reason for rejection of other alternatives, e.g., performance, technical or safety standards, and the anticipated date other substitutes will be available and projected time for switching to other available substitutes. Use of such substitutes in applications and end-uses which are not specified as acceptable in the narrowed use limit renders these substitutes unacceptable.

In this Final Rule (FR), EPA is issuing its decision to restrict use of certain substitutes not previously reviewed by the Agency. As described in the final rule for the SNAP program (59 FR 13044), EPA believes that notice-and-comment rulemaking is required to place any alternative on the list of prohibited substitutes, to list a substitute as acceptable only under certain use conditions or narrowed use limits, or to remove an alternative from either the list of prohibited or acceptable substitutes.

EPA does not believe that rulemaking procedures are required to list alternatives as acceptable with no limitations. Such listings do not impose any sanction, nor do they remove any prior license to use a substitute. Consequently, EPA periodically adds substitutes to the list of acceptable alternatives without first requesting comment on new listings. Updates to the acceptable and pending lists are

published in separate Notices in the Federal Register.

Parts A. through C. below present a detailed discussion of the substitute listing determinations by major use sector. Tables summarizing listing decisions in this rulemaking are in Appendix D to 40 CFR 82, subpart G. The comments contained in Appendix D provide additional information on a substitute. Since comments are not part of the regulatory decision, they are not mandatory for use of a substitute. Nor should the comments be considered comprehensive with respect to other legal obligations pertaining to the use of the substitute. However, EPA encourages users of substitutes to apply all comments in their application of these substitutes. In many instances, the comments simply allude to sound operating practices that have already been identified in existing industry and/or building-code standards. Thus, many of the comments, if adopted, would not require significant changes in existing operating practices for the affected industry.

#### *A. Refrigeration and Air Conditioning*

##### *1. Response to Comments*

Several commenters, representing trade organizations, auto manufacturers, and the general public, expressed concern about the proliferation of alternative refrigerants for motor vehicle air conditioning systems (MVACS). They identified four issues:

- New refrigerants are being used and sold before EPA has come to a final determination on acceptability, including any necessary conditions on use;
- EPA's proposed rule does not make clear who is responsible for developing unique fittings and labels;
- EPA's proposed rule identifies no central source for information about fitting or label specifications;
- EPA's proposed rule does not specify any mechanism to ensure that fittings are unique, or that the colors chosen for labels are specific to individual refrigerants.

The first issue, that people are using new refrigerants before EPA issues final determinations on them, is a result of the notice-and-comment rulemaking process and the statutory framework of the SNAP program. EPA must solicit public comment before imposing any restrictions on the use of a substitute. At the same time, the SNAP notification requirement under section 612 of the Clean Air Act requires those intending to sell new substitutes, to notify EPA, 90 days prior to their introduction, after which they are legally permitted to sell

them. Since notice-and-comment rulemaking normally takes up to one year, this means that in some cases products are being sold *before* EPA makes a final determination as to their environmental acceptability.

EPA agrees that the lag time between SNAP notification and a final rulemaking creates a window when people may legally use an alternative refrigerant without an existing acceptability determination. This creates confusion in the marketplace, and an inequitable situation in which new alternatives may be used without the unique fittings and labels that are required of alternatives which have undergone SNAP review, or without a SNAP review of overall environmental acceptability. EPA is concerned about this issue because of the potential for cross-contamination of the supply of refrigerants, particularly CFC-12, and about the potential for mishandling alternatives, or of significant market penetration of alternatives which are later deemed unacceptable.

To address this issue, EPA has promulgated two general requirements which apply to all future submissions as a class. This means that EPA need not engage in notice-and-comment rulemaking on these basic requirements, which apply to all motor vehicle air conditioning substitutes, in the future. This will streamline the regulatory process and lessen the potential for confusion, contamination and mishandling. First, in the June 13, 1995 final rule (60 FR 31092), EPA prohibited the use of flammable CFC alternatives in the MVACS sector as a class. Second, in this final rule EPA has changed the notification requirement for new substitutes in the MVACS sector to require manufacturers of new alternatives to submit unique fittings and a sample label at the start of the SNAP review process, to minimize the likelihood of substitutes pending final action being used without such fittings and labels. Making these requirements final prospectively for all new MVACS submissions will allow EPA to process individual MVACS determinations under SNAP faster.

Two commenters were concerned that by eliminating the notice-and-comment rulemaking process, EPA was removing an opportunity to comment on the possible need for additional use conditions. EPA believes that the petition process established under the SNAP program addresses this issue. For any decision made under SNAP, any person is free to request that EPA subsequently consider changes based on new data, including removing or adding use conditions or other restrictions. If

EPA agrees that such changes are appropriate, they would be promulgated via notice-and-comment rulemaking. In addition, EPA may, on its own, determine that additional conditions or restrictions should be added or removed through future rulemaking.

The second issue relates to the question of who is responsible for developing new unique fittings. EPA has always intended to require manufacturers of new refrigerants to develop new fittings for their refrigerants. To this end, EPA stated in the NPRM that "it will be necessary for developers of automotive refrigerants to consult with EPA about the existence of other alternatives. Such discussions will lower the risk of duplicating fittings already in use." Today's FRM formalizes the requirement that manufacturers must develop unique fittings, and prohibits the use of anything but the manufacturer-specified fittings with alternative refrigerants. In cases where the submitter is not also the manufacturer, the submitter must coordinate with the manufacturer to develop unique fittings for new refrigerants. This will minimize the likelihood of different fittings being submitted for the same refrigerant.

The third and fourth issues both relate to EPA's function as a clearinghouse for information about fittings and label background colors. Initially, it appeared there would be very few alternatives for this end-use. At that time, EPA envisioned that manufacturers of alternative refrigerants would communicate with each other to prevent duplication of fittings or label colors. However, a broader range of alternatives has been developed. In response to the questions from commenters about how submitters are to know whether their fittings or colors are indeed unique, today's final rule formalizes an expanded clearinghouse role for EPA, in which the Agency maintains a library of unique fittings and label specifications, and provides information on these to the regulated community and the public upon request. To make this possible, this final rule requires that, for new refrigerants submitted for the MVACS end-use, fitting specifications, a complete set of sample fittings, and a sample label must be submitted at the same time as the rest of the information detailed in the March 18, 1994 SNAP rule (59 FR 13044). Even if a submission includes information required in 1994 FRM, it will be considered incomplete until the fitting specifications and sample fittings and labels are sent to EPA. As explained in the March 18, 1994 final rule, a submission must be complete before the countdown of the

90-day moratorium on sale begins. Thus, the prohibition against sale of a new refrigerant will not end until 90 days after the date that EPA determines the submission is complete. EPA will send a letter to the submitter indicating that a complete submission has been received and specifying the start of the 90-day period.

Finally, EPA will create a package of information about all existing fittings and labels that will be available to the public. This package will allow developers of new refrigerants to avoid duplication with existing fittings or label background colors. It will also allow EPA to consult industry experts to ensure that current refrigerants are in fact being used with unique fittings. When developing unique fittings, manufacturers should consider the possibility of cross-threading using normal force and standard tools. EPA will propose more specific guidelines for fitting design in a future NPRM.

One commenter noted that although EPA proposed requiring barrier hoses for several refrigerants, this additional use condition was inadvertently omitted from the proposed regulatory language. EPA has corrected this error in today's final rule.

Several commenters requested that EPA not allow the sale of a new refrigerant prior to EPA's final determination and imposition of use conditions. This issue is related to the concern about the time delay between EPA's receipt of notification and final rulemaking. Under section 612 of the Clean Air Act, manufacturers of substitutes must submit them to EPA 90 days prior to selling them. However, the Act does not give EPA authority to prevent sale once the 90 days have expired. Therefore, EPA cannot prevent new products from entering the market, even in the absence of a final determination under the SNAP program. The new process, whereby EPA will impose standard use conditions on new MVAC refrigerants via Notice of Acceptability, will address this concern by shortening the time between initial submission and final determination. In addition, submissions that do not contain fittings specifications, samples, and labels will be incomplete, lessening the possibility that new materials will be widely available before manufacturers have yet identified unique fittings.

One commenter suggested specific criteria for determining whether fittings are unique. EPA believes this is a valuable suggestion, and will propose such criteria in a separate NPRM.

One commenter expressed concern that EPA is allowing the use of

substitutes that contain ozone-depleting HCFCs and global warming gases such as certain HCFCs and HFCs. It is important to note that, in accordance with guidelines set forth in the March 18, 1994 SNAP rule, EPA conducts a comparative risk screen comparing new alternatives both to the ozone-depleting substances they are replacing and to other alternatives available for the same end-use. EPA has long maintained that HCFCs play an important role in the transition away from CFCs. Among the HCFCs being used in MVAC refrigerants, HCFC-142b has the highest ozone depletion potential (ODP) of 0.06. EPA believes that this is environmentally acceptable since the new refrigerants are replacing CFC-12, with a much higher ODP of 1.0. Similarly, the global warming potentials (GWP) of various components are lower than that of CFC-12. EPA continues, however, to encourage the development of zero-ODP and low-GWP refrigerants. In addition, all SNAP reviews to date, and all future reviews, consider both ODP and GWP, along with toxicity, flammability, and ecological effects.

Several commenters expressed concern that the large number of alternative MVAC refrigerants would result in excessive venting because of a lack of adequate recovery equipment. Under sections 608 and 609 of the Clean Air Act, it is illegal to vent any alternative refrigerant. In addition, several manufacturers have established programs to accept used refrigerant for reclamation or disposal. EPA urges industry to develop similar mechanisms to ensure that the venting prohibition is observed. EPA will monitor the effect of the alternatives on the contamination of the CFC-12 supply, as well as the extent of cross-contamination of the substitutes themselves. If appropriate, EPA will propose additional requirements for the use of substitutes in a future NPRM.

Several commenters requested that EPA require that manufacturers provide certain types of information to all end-users. These additional requirements are beyond the scope of the NPRM. EPA will consider proposing such requirements in a future NPRM.

One commenter requested that certain information be removed from the required labels applied to systems using alternative refrigerants, noting that the label is intended for use by service personnel, not the consumer. EPA disagrees, and believes that this label contains important information for the consumer. Despite a comprehensive review of environmental and human health risks posed by new refrigerants, many alternatives have undergone only limited performance testing. The label

gives the car owner details about who performed the retrofit, what materials were used, and whether the product contains a chemical that will damage the ozone layer. Finally, in the case of flammable refrigerants, it is especially important to call attention to that characteristic. Flammability information will alert both service personnel and car owners who may perform limited servicing of their own vehicles to the presence of a flammable refrigerant.

The commenter also reiterated a request to include a model label. EPA believes that many possible configurations and layouts would satisfy the labeling requirement, and does not believe that prescribing such a layout would be beneficial. Any label that contains the required information, and features a unique color, will serve to inform both service personnel and car owners. The existence of an EPA information package available to the public which will show colors and configurations of existing labels will assure that each new substitute's label has a unique background color. Labels used for refrigerants already listed as acceptable subject to use conditions will be in this package, and may be used as models by future submitters.

Finally, one commenter requested clarification on the definition of "barrier hoses." In general, this term means a hose that has a protective layer specifically designed to reduce refrigerant leakage.

## 2. Acceptable Subject to Use Conditions

*a. CFC-12 Automobile and Non-automobile Motor Vehicle Air Conditioners, Retrofit and New.* EPA is concerned that the existence of several substitutes in this end-use may increase the likelihood of significant refrigerant cross-contamination and potential failure of both air conditioning systems and recovery/recycling equipment. In addition, a smooth transition to the use of substitutes strongly depends on the continued purity of the recycled CFC-12 supply. In order to prevent cross-contamination and preserve the purity of recycled refrigerants, EPA is imposing conditions on the use of all motor vehicle air conditioning refrigerants. For the purposes of this final rule, no distinction is made between "retrofit" and "drop-in" refrigerants; retrofitting a car to use a new refrigerant includes any and all procedures that result in the air conditioning system using a new refrigerant.

EPA has already applied the following requirements to several refrigerants. The June 13, 1995 final rule applied them to HFC-134a, FRIGC (HCFC Blend Beta),

and R-401C. The May 22, 1996 final rule applied them to Freezezone and Ikon. With today's final rule, EPA applies the use conditions to all refrigerants still awaiting final determinations, and all future refrigerants submitted for use in MVACs. With these conditions in place in general, consumers and repair shops will be protected from cross-contamination and potential system damage. In addition, by reducing the delay between submission and a final determination, EPA minimizes the possibility that a refrigerant will gain widespread use without meeting the use conditions.

When retrofitting a CFC-12 motor vehicle air conditioning system to use any substitute refrigerant, the following conditions must be met:

- Each refrigerant may only be used with a set of fittings that is unique to that refrigerant. These fittings (male or female, as appropriate) must be designed by the manufacturer of the refrigerant. The manufacturer is responsible to ensure that the fittings meet all of the requirements listed below, including testing according to SAE standards. These fittings must be designed to mechanically prevent cross-charging with another refrigerant, including CFC-12.

The fittings must be used on all containers of the refrigerant, on can taps, on recovery, recycling, and charging equipment, and on all air conditioning system service ports. A refrigerant may only be used with the fittings and can taps specifically intended for that refrigerant and designed by the manufacturer of the refrigerant. Using a refrigerant with a fitting designed by anyone else, even if it is different from fittings used with other refrigerants, is a violation of this use condition. Using an adapter or deliberately modifying a fitting to use a different refrigerant is a violation of this use condition.

Fittings shall meet the following criteria, derived from Society of Automotive Engineers (SAE) standards and recommended practices:

- When existing CFC-12 service ports are retrofitted, conversion assemblies shall attach to the CFC-12 fitting with a thread lock adhesive and/or a separate mechanical latching mechanism in a manner that permanently prevents the assembly from being removed.
- All conversion assemblies and new service ports must satisfy the vibration testing requirements of sections 3.2.1 or 3.2.2 of SAE J1660, as applicable, excluding references to SAE J639 and SAE J2064, which are specific to HFC-134a.

- In order to prevent discharge of refrigerant to the atmosphere, systems shall have a device to limit compressor operation before the pressure relief device will vent refrigerant.

- All CFC-12 service ports not retrofitted with conversion assemblies shall be rendered permanently incompatible for use with CFC-12 related service equipment by fitting with a device attached with a thread lock adhesive and/or a separate mechanical latching mechanism in a manner that prevents the device from being removed.

- When a retrofit is performed, a label must be used as follows:

- The person conducting the retrofit must apply a label to the air conditioning system in the engine compartment that contains the following information:

- \* The name and address of the technician and the company performing the retrofit;

- \* The date of the retrofit;

- \* The trade name, charge amount, and, where it exists, the ASHRAE numerical designation of the refrigerant;

- \* The type, manufacturer, and amount of lubricant used;

- \* If the refrigerant is or contains an ozone-depleting substance, the phrase "ozone depleter";

- \* If the refrigerant displays flammability limits as measured by ASTM E681, the statement "This refrigerant is FLAMMABLE. Take appropriate precautions." This precaution does not apply to unacceptable refrigerants, because it is illegal to replace CFC-12 with such products.

- The label must be large enough to be easily read and must be permanent.

- The background color must be unique to the refrigerant.

- The label must be affixed to the system over information related to the previous refrigerant, in a location not normally replaced during vehicle repair.

- In accordance with SAE J639, testing of labels must meet ANSI/UL 969-1995.

- Information on the previous refrigerant that cannot be covered by the new label must be rendered permanently unreadable.

- No substitute refrigerant may be used to "top-off" a system that uses another refrigerant. The original refrigerant must be recovered in accordance with regulations issued under Section 609 of the CAA prior to charging with a substitute.

All new refrigerants will be submitted with specifications and samples for all

fittings and samples of labels. EPA will review the fittings and test for cross-connections between the new fitting and existing fittings for already listed refrigerants. At the same time, EPA will compare the background color of the sample label to those of other already listed refrigerants. If the fittings are unique and cannot be mechanically cross-threaded, and the label color is unique to that refrigerant, EPA will issue a letter to the manufacturer confirming that the submission is complete. This confirmation letter will identify the term of the 90-day sales moratorium required by section 612 of the Clean Air Act, during which the refrigerant may not be sold or used. EPA will issue a Notice of Acceptability for the new refrigerant as soon as possible, which will impose the requirements described above. EPA will then update a package of materials containing specifications for existing fittings. This package will be provided to manufacturers of new refrigerants and others who request it, to lower the risk of duplicating fittings already in use.

If the fittings or the label color are not, in fact, unique, EPA will issue a letter to the manufacturer indicating that the submission is not complete. Because the submission is incomplete, the notification requirement has not been satisfied, and the 90-day clock does not begin to run until the submitter repairs any identified defect and receives subsequent notification in a letter from EPA that the submission is complete. This prohibition does not require further rulemaking, because it derives from the notification requirements promulgated in the final SNAP rule of March 18, 1994 (59 FR 13044).

EPA will take enforcement action for any violation of these provisions, including (a) selling a substitute prior to 90 days after receipt of a letter from EPA certifying the completeness of a submission, (b) using a refrigerant without changing the fittings, applying a new label, and removing the original CFC-12 charge, or (c) using a refrigerant with fittings other than those designed by the refrigerant manufacturer. The intent of these conditions is to minimize the likelihood of cross-contamination and attendant damage to automotive air conditioners and recycling equipment, to reduce consumer confusion and in general to minimize the difficulty of the transition away from CFC-12.

Furthermore, it is important to understand the meaning of "acceptable subject to use conditions." EPA believes such refrigerants, when used in accordance with the conditions, are safer on an overall basis for human health and the environment than CFC-

12. This *does not imply* that the refrigerant will work in any specific system, nor does it mean that the refrigerant is perfectly safe regardless of how it is used. Nor does EPA approve or endorse any one refrigerant that is acceptable subject to use conditions over others also in that category.

Note also that EPA does not test refrigerants for performance characteristics. Rather, a SNAP review includes information submitted by manufacturers and various independent testing laboratories. Therefore, it is important to discuss any new refrigerant with the automaker, the refrigerant manufacturer and the shop technician before deciding to use it, and in particular to determine what effect using a new refrigerant will have on a system warranty. Before choosing a new refrigerant, users should also consider whether it is readily and widely available, and technicians should consider the cost of buying recovery/recycling equipment for that refrigerant. Additional questions about purchasing CFC-12 substitutes are addressed in EPA fact sheets titled: "Questions to Ask Before You Purchase an Alternative Refrigerant" and "Choosing and Using Alternative Refrigerants for Motor Vehicle Air Conditioning."

#### (1) All Refrigerants

All refrigerants listed in future notices as being "acceptable subject to use conditions" as substitutes for CFC-12 in retrofitted and new motor vehicle air conditioners are subject to the use conditions described above, in addition to the requirement that specifications for the fittings similar to those found in SAE J639 and samples of all fittings and labels described above must be submitted to EPA at the same time as the initial SNAP submission, or the submission will be considered incomplete. Note: substitutes for which submissions are incomplete may not be sold or used, regardless of other acceptability determinations, until 90 days after receipt of a letter from EPA notifying the submitter that the submission is complete.

In the March 18, 1994 FRM (59 FR 13044), EPA established that the public would be informed via a Notice when substitutes are added to the acceptable list. If EPA intended to place any restrictions, including use conditions, on the use of a substitute, that determination would require full notice-and-comment rulemaking. In this FRM, EPA modifies that approach for motor vehicle air conditioning systems (MVACs).

As explained above, EPA is concerned about potential cross-contamination

because of the large number of MVAC refrigerants. In this FRM, EPA imposes the same use conditions on all future MVAC refrigerants as were imposed on HFC-134a and HCFC Blend Beta (FRIGC FR-12) on June 13, 1995 (60 FR 31092), and on HCFC Blend Delta (Freezone) and Blend Zeta (Ikon-12) on May 22, 1996 (60 FR 51383). Because of EPA's interest in timely review of substitute refrigerants, EPA believes it is appropriate that these use conditions be applied to all future refrigerants for use in motor vehicle air conditioning, thereby removing the requirement for future notice-and-comment rulemaking on this issue. In the future, EPA will add refrigerants to the list of automotive substitutes that are acceptable subject to use conditions described above without notice-and-comment rulemaking. Such action will occur in future Notices of Acceptability. If further restrictions are necessary for a specific refrigerant (for example, if a substitute is found unacceptable), EPA will still carry out such action via notice-and-comment rulemaking. However, EPA may choose to list the substitute as acceptable subject to the use conditions listed above while proceeding with notice-and-comment rulemaking to impose other restrictions.

#### (2) R-406A

R-406A, which consists of HCFC-22, HCFC-142b, and isobutane, is acceptable as a substitute for CFC-12 in retrofitted and new motor vehicle air conditioners, subject to the use conditions applicable to motor vehicle air conditioning described above, in addition to the requirement that retrofitting a CFC-12 MVAC system to R-406A must include replacing non-barrier hoses with barrier hoses. Because HCFC-22 and HCFC-142b contribute to ozone depletion, and will be phased out of domestic production in the future, this blend is considered a transitional alternative. Regulations regarding recycling and reclamation issued under section 609 of the Clean Air Act apply to this blend. HCFC-142b has one of the highest ODPs among the HCFCs. The GWPs of HCFC-22 and HCFC-142b are somewhat high. Although HCFC-142b and isobutane are flammable, the blend is not. After significant leakage, however, this blend may become weakly flammable. The manufacturer has performed a risk assessment that demonstrates that it can be used safely in this end-use.

There is concern that HCFC-22 may seep out of traditional hoses. Thus, at the manufacturer's suggestion, EPA is imposing an additional condition that barrier hoses must be used with R-

406A. Note that there may also be concern about the compatibility of HCFC-22 with seals commonly found in CFC-12 systems. Consult with the refrigerant manufacturer, the manufacturer of the car, and service personnel about this potential problem. R-406A is sold under the trade names "GHG" and "McCool."

The R-406A submission contained the first risk assessment that attempted to quantify the additional risk posed by using a refrigerant that is nonflammable but that may fractionate to a flammable state. This assessment was performed by a nationally known laboratory. Note that R-406A is not flammable as blended, so it poses zero flammability risk to service technicians who charge it into a system, and to the vast majority of users and subsequent technicians. Even when approximately 80% of the normal charge leaks out, the remaining components are only marginally flammable. It is unlikely such large leakage would occur before servicing. After an 80% leak, a match brought near the leak will ignite the escaping vapors, but the flame will extinguish on its own when the match is withdrawn.

EPA did not receive any comments on this risk assessment, which concluded that an additional 0.018 injuries could occur per million vehicles annually. This value is extremely low. In addition, even assuming the assessment is in error by a factor of 100, the resultant potential for injury would be very low.

#### (3) HCFC Blend Lambda

HCFC Blend Lambda, which consists of HCFC-22, HCFC-142b, and isobutane, is acceptable as a substitute for CFC-12 in retrofitted and new motor vehicle air conditioners, subject to the use conditions applicable to motor vehicle air conditioning described above, in addition to requirement that retrofitting a CFC-12 MVAC system to this blend must include replacing non-barrier hoses with barrier hoses. Because HCFC-22 and HCFC-142b contribute to ozone depletion, they will be phased out of production. Therefore, this blend will be used primarily as a retrofit refrigerant. However, HCFC Blend Lambda is acceptable for use in new systems, subject to the same use conditions. Regulations regarding recycling and reclamation issued under section 609 of the Clean Air Act apply to this blend. HCFC-142b has one of the highest ODPs among the HCFCs. The GWPs of HCFC-22 and HCFC-142b are somewhat high. Although HCFC-142b and isobutane are flammable, the blend is not. After significant leakage, this blend may become weakly flammable. However, this blend contains more

HCFC-22 and less of the two flammable components than R-406A, and therefore should be at least as safe to use as R-406A. In addition, as discussed above in the R-406A section, the manufacturer has performed a risk assessment that demonstrates that R-406A can be used safely in this end-use. Finally, as stated above, this blend contains even lower percentages of flammable components than R-406A.

There is concern that HCFC-22 will seep out of traditional hoses. Thus, at the manufacturer's suggestion, EPA is imposing an additional condition that barrier hoses must be used with R-406A. Note that there may also be concern about the compatibility of HCFC-22 with seals commonly found in CFC-12 systems. Consult with the refrigerant manufacturer, the manufacturer of the car, and service personnel about this potential problem. This blend is sold under the trade name "GHG-HP."

#### (4) HCFC Blend Xi, HCFC Blend Omicron

HCFC Blend Xi and HCFC Blend Omicron, both of which consist of HCFC-22, HCFC-124, HCFC-142b, and isobutane, are acceptable as substitutes for CFC-12 in retrofitted and new motor vehicle air conditioners, subject to the use conditions applicable to motor vehicle air conditioning described above, in addition to the requirement that retrofitting a CFC-12 MVAC system to these blends must include replacing non-barrier hoses with barrier hoses. Because HCFC-22 and HCFC-142b contribute to ozone depletion, they will be phased out of production. Therefore, these blends will be used primarily as retrofit refrigerants. However, these blends are acceptable for use in new systems, subject to the same use conditions. Regulations regarding recycling and reclamation issued under section 609 of the Clean Air Act apply to these blends. HCFC-142b has one of the highest ODPs among the HCFCs. The GWPs of HCFC-22 and HCFC-142b are somewhat high. Although HCFC-142b and isobutane are flammable, these blends are not. In addition, testing on these blends has shown that they do not become flammable after leaks. EPA is concerned that HCFC-22 will seep out of traditional hoses. Thus, EPA is imposing an additional condition that barrier hoses must be used with HCFC Blend Xi and HCFC Blend Omicron. Note that there may also be concern about the compatibility of HCFC-22 with seals commonly found in CFC-12 systems. Consult with the refrigerant manufacturer, the manufacturer of the car, and service personnel about this

potential problem. HCFC Blend Xi is being sold under the trade names "GHG-X4," "Autofrost," and "Chill-It," and HCFC Blend Omicron is being sold under the trade names "Hot Shot" and "Kar Kool."

#### (5) FREEZE 12

FREEZE 12, which consists of HCFC-142b and HFC-134a, is acceptable as a substitute for CFC-12 in retrofitted and new motor vehicle air conditioners, subject to the use conditions applicable to motor vehicle air conditioning described above. Because HCFC-142b contributes to ozone depletion, and will be phased out of domestic production in the future, this blend is considered a transitional alternative. Regulations regarding recycling and reclamation issued under section 609 of the Clean Air Act apply to this blend. Its production will be phased out according to the accelerated schedule (published 12/10/93, 58 FR 65018). The GWP of HFC-134a is 1300. This blend is nonflammable, and leak testing has demonstrated that the blend never becomes flammable. Although this blend was not included in the original NPRM, this FRM establishes a new procedure whereby EPA will list new substitutes for CFC-12 in MVACs in Notices, which do not require formal notice-and-comment rulemaking. This blend was submitted to EPA between the NPRM and this final rule. It would be inconsistent to allow this blend to be sold and used without adhering to the use conditions applied to all other MVAC alternative refrigerants while developing a Notice. Therefore, EPA is including this blend in the FRM instead of in a future Notice.

### B. Solvent Cleaning

#### 1. Response to Public Comment

EPA received a number of comments on the solvent cleaning decisions listed in today's Final Rule. One commenter stated that the EPA should set workplace standards such as the one proposed for HFC-4310mee based only on toxicity and should not consider standards set by other regulatory bodies such as the Occupational Safety and Health Administration (OSHA). This approach would contradict the precedent set through other SNAP listings, since the purpose of the SNAP program is to defer to the existing regulatory structure, not to replace or recreate it.

The Agency received conflicting comments on the decision to list HFC-4310mee and perfluoropolyethers (PFPEs) as acceptable subject to restrictions. Several commenters stated

that these chemicals should not be approved since other chemicals exist that offer the same performance without the global warming effects. Other commenters claimed that although PFPEs were necessary for industrial uses, they concurred with the decision to restrict their use based on global warming concerns. In response, the Agency notes that the global warming potential of HFC-4310mee is significantly smaller than that of CFC-113 and that its toxicity can be readily managed through use of well-designed equipment. As a result, the Agency is proceeding with the listing determination for HFC-4310mee as proposed. With respect to PFPEs, the Agency concurs with commenters that the global warming potential of these chemicals must be taken into account in the listing decision and notes that the listing decision restricts PFPEs to narrowed uses only where no other alternative exists.

The Agency received more than 20 comments on the listing decision for HCFC-141b. Four commenters requested an extension of the permissible use period for HCFC-141b beyond January 1, 1997. The remaining commenters either endorsed the one-year extension or opposed any extension outright. The comments did not provide the necessary technical information for EPA to evaluate the need for an extension, and the Agency, as a result, initiated its own assessment of the need for an extension. This analysis indicated that industry experts and the majority of solvent users themselves believed that a phaseout of 141b use in solvent cleaning was possible by the end of 1996, and the Agency is therefore proceeding with the extension as it had been proposed.

## 2. Acceptable Subject to Use Conditions

*a. Electronics Cleaning.* (a) HFC-4310mee. *HFC-4310mee is an acceptable substitute for CFC-113 and methyl chloroform (MCF) in electronics cleaning subject to a 200 ppm time-weighted average workplace exposure standard and a 400 ppm workplace exposure ceiling.* HFC-4310mee is a new chemical that completed review last year by EPA's Premanufacture Notice Program under the Toxic Substances Control Act. This chemical does not deplete the ozone layer since it does not contain chlorine or bromine. It does have some potential to contribute to global warming since its 100-year Global Warming Potential (GWP) is 1600 and it has a 20.8 year lifetime. However, the GWP and lifetime for HFC-4310 are both lower than the GWP and lifetime for CFC-113 and

significantly lower than for PFCs, which are other substitutes for ozone-depleting solvents.

HFC-4310mee does exhibit some toxicity in tests reviewed by EPA, and causes central nervous system effects at relatively low levels. However, these effects are reversible and cease once chemical exposure is eliminated. Review under the SNAP program and the PMN program determined that a time-weighted average workplace exposure standard of 200 ppm and a workplace exposure ceiling of 400 ppm would adequately protect of human health and that companies could readily meet these exposure limits using the types of equipment specified in the product safety information provided by the chemical manufacturer.

These workplace standards are designed to protect worker safety until the Occupational Safety and Health Administration (OSHA) sets its own standards under P.L. 91-596. The existence of the EPA standards in no way bars OSHA from standard-setting under OSHA authorities as defined in P.L. 91-596.

*B. Precision Cleaning.* (a) HFC-4310mee. *HFC-4310mee is an acceptable substitute for CFC-113 and methyl chloroform in precision cleaning subject to a 200 ppm time-weighted average workplace exposure standard and a 400 ppm workplace exposure ceiling.* The reasoning behind this determination is presented above in the section on electronics cleaning.

These workplace standards are designed to protect worker safety until the Occupational Safety and Health Administration (OSHA) sets its own standards under P.L. 91-596. The existence of the EPA standards in no way bars OSHA from standard-setting under OSHA authorities as defined in P.L. 91-596.

## 3. Acceptable Subject to Narrowed Use Limits

*a. Electronics Cleaning.* (a) Perfluoropolyethers. *Perfluoropolyethers are acceptable substitutes for CFC-113 and MCF in the electronics cleaning sector for high performance, precision-engineered applications only where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements.* These chemicals have global warming characteristics comparable to the perfluorocarbons and, as a result, are subject to the same restrictions. A full discussion of the global warming concerns and related risk management decision can be found

under 59 FR 13044 (March 18, 1994, at p. 13094)

*b. Precision Cleaning.* (a) Perfluoropolyethers. *Perfluoropolyethers are acceptable substitutes for CFC-113 and MCF in the precision cleaning sector for high performance, precision-engineered applications only where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements.* These chemicals have global warming characteristics comparable to the perfluorocarbons and, as a result, are subject to the same restrictions. A full discussion of the global warming concerns and related risk management decision can be found under 59 FR 13044 (March 18, 1994, at p. 13094)

## 4. Unacceptable

*a. Electronics Cleaning.* (a) HCFC-141b. *HCFC-141b is unacceptable as a substitute for CFC-113 and MCF in electronics cleaning under existing rules (59 FR 13044; March 18, 1994); today's rule amends this unacceptability determination and lists existing uses of HCFC-141b as acceptable in high-performance electronics cleaning until January 1, 1997.* This determination extends the use date for HCFC-141b in solvent cleaning, but only for existing users in high-performance electronics and only for one year. The extension does not affect the production phaseout date for HCFC-141b, which is January 1, 2003.

The extension should not be viewed as a reason to postpone replacement of 141b. Alternatives exist for nearly all solvent cleaning applications of 141b, and the principal reason for the extension is the long lead time necessary to test, select, and implement a chosen substitute in high-performance applications where stringent qualifications testing is the norm.

Existing regulations affect 141b in two ways. Under the production phaseout for ozone-depleting substances (ODS), 141b has a phaseout date of January 1, 2003. This regulation, developed under section 604 of the Clean Air Act (CAA), states that chemical manufacturers will no longer be allowed to manufacture 141b as of that date (40 CFR Part 82, Subpart G, Appendix A). HCFC-141b is also subject to a number of use restrictions relevant to solvent cleaning operations. According to regulations developed under section 612 of the CAA—the SNAP program—the only companies allowed to use 141b in solvent cleaning equipment are existing users. Existing users were defined in the March 1994 determination as companies



who had 141b-based solvent cleaning equipment in place as of April 18, 1994. No new substitutions into 141b for solvent cleaning were permitted, and even existing users could use 141b only until January 1, 1996. This use ban date for existing users is the subject of the extension in today's final rule. HCFCs, including 141b, are also covered by other use restrictions such as the nonessential ban (section 610) and labeling (section 611). The 610 and 611 regulations are not discussed here. If you need more information about these regulations, call the Stratospheric Ozone Protection Hotline at 1-800-296-1996.

Many users and vendors of 141b have requested that the Agency postpone the effective date of the use ban under SNAP for solvent cleaning beyond January 1, 1996. In response to these petitions, EPA is offering a one-year use extension. Note, however, that the only change is that existing uses in high-performance electronics cleaning would be permitted for an additional year until January 1, 1997. (Precision cleaning uses are also extended in today's rulemaking, but are listed in the next section.) "High-performance electronics" would include high-value added electronic components for aerospace, military, or medical applications such as hybrid circuits or other electronics for missile guidance systems. The existing policy of no new substitutions into 141b is maintained and uses of 141b in metals cleaning and basic electronics cleaning are all expected to have ended as of January 1, 1996. These banned applications include cleaning of basic, formed metal parts and high-volume electronics cleaning such as components for consumer electronics.

An important distinction is that "solvent cleaning" in the SNAP program is defined to cover replacements of ODS in industrial cleaning, either in vapor degreasing or cold cleaning. It does not include aerosol applications, which are covered separately under the SNAP program. It also does not include other solvent cleaning uses of OZONE-DEPLETING SUBSTANCES (ODS) such as in textile cleaning, dry cleaning, flushing of oxygen systems or automotive air conditioning systems, or hand wiping. This means, for instance, that the use ban date does not apply to 141b used for hand wiping. However, users should understand that although these uses are not currently governed by the SNAP program, responsible corporate policy would be to implement alternatives to ODS where possible. Additionally, SNAP reserves the right to regulate any use where significant environmental

differences exist in the choice of alternatives. To minimize the paperwork burden, no reporting is required for companies that qualify for an extension.

The extension is not an excuse to delay selecting an alternative. The principal reason for extending the permissible period of use for 141b in these narrowed applications is not that alternatives do not exist, but that users need more time to qualify and implement alternatives. Even with the extension, uses of 141b in the specified applications will only be permitted for another 12 months beyond the current use ban date. This additional time can only be used productively if users begin now to select, test, order equipment and materials, etc.

The search for alternatives should include not just aqueous and semi-aqueous alternatives, but also recently developed cleaning chemicals and technologies. Information on vendors of substitutes is available from the Stratospheric Ozone Protection Hotline. Call 1-800-296-1996 and ask for the Vendor List for Precision Cleaning. In addition, EPA has more detailed information available on topics such as retrofitting 141b degreasers to use HFCS or on cleaning of medical devices.

Users and vendors of HCFC-141b had asked the Agency to extend the permissible use date beyond January 1, 1997. In its analysis of the extension for 1996, the Agency gave serious consideration to the need for additional time for HCFC-141b use. However, public comments on the rule and the Agency's own analysis strongly indicated that many alternatives are now available that could meet the performance needs of all current HCFC-141b users. Many of the users had been waiting for the introduction of a particular class of specialty chemicals, the hydrofluoroethers, which was originally planned for 1997. The accelerated introduction of these chemicals, combined with the availability of other cleaning alternatives such as aqueous processes, HFC-4310, HCFC-225, isopropyl alcohol in explosion-proof equipment, volatile methyl siloxanes, and innovative uses of carbon dioxide and supercritical fluids, means that 141b users now have a multitude of options to choose from.

The Agency also considered the possibility that further lead time was needed to qualify the new alternatives, but again, the Agency's own analysis and the comments received on the proposed one-year extension for 1996 demonstrated that the Agency had provided sufficient notice to HCFC-

141b users regarding the impending use restrictions on this HCFC.

*b. Precision Cleaning.* (a) HCFC-141b. HCFC-141b is unacceptable as a substitute for CFC-113 and MCF in precision cleaning under existing rules (59 FR 13044; March 18, 1994); today's rule amends this unacceptability determination and lists existing uses of HCFC-141b as acceptable in precision cleaning until January 1, 1997. This determination extends the use date for HCFC-141b in solvent cleaning, but only for existing users in precision cleaning and only for one year. The extension does not affect the production phaseout date for HCFC-141b, which is January 1, 2003.

For a full discussion of the rationale for extension, please see the previous section on electronics cleaning. This discussion applies in-full to precision cleaning, which for purposes of this extension is defined to include cleaning of devices of high-value added, precision-engineered parts such as precision ball bearings for navigational devices, or other components for aerospace, medical or medical uses.

### C. Aerosols

#### 1. Response to Public Comment

Several commenters stated that perfluorocarbons and perfluoropolyethers should not be approved since other chemicals exist that offer the same performance without the global warming effects. The Agency concurs with commenters that the global warming potential of these chemicals must be taken into account in the listing decision. However, the Agency believes that the need to provide a CFC solvent alternative that offers both non-flammability and low toxicity supports the Agency's SNAP decision on PFCs and PFPEs for aerosols. The newer solvents mentioned in the comments offer significant commercial promise, but testing to determine their full ability to substitute for CFCs and MCF has not yet been completed. As a result, the Agency is proceeding with the listing decision for PFCs and PFPEs as a narrowed use as proposed.

#### 2. Acceptable Subject to Narrowed Use Limits

*a. Solvents.* (a) Perfluorocarbons. Perfluorocarbons (PFCs) are acceptable substitutes for CFC-113 and MCF for aerosol applications only where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements. EPA is permitting the use of PFCs in aerosols

applications despite their global warming potential since so few nontoxic, nonflammable solvents exist and this sector presents a high probability of worker exposure and safety risks. PFCs are already subject to similar restrictions in the solvents cleaning sector due to global warming concerns (59 FR 13044, March 18, 1994). This decision will allow users to select PFCs in the event of performance or safety concerns while guarding against widespread, unnecessary use of these potent greenhouse gases.

(b) *Perfluoropolyethers.* Perfluoropolyethers (PFPEs) are acceptable substitutes for CFC-113 and MCF for aerosol applications only where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements. EPA is permitting the use of perfluoropolyethers in aerosol applications despite their global warming potential since so few nontoxic, nonflammable solvents exist and this sector presents a high probability of worker exposure and safety risks. PFCs, which have global warming potentials comparable to the PFPEs, are already subject to similar restrictions in the solvents cleaning sector due to global warming concerns (59 FR 13044, March 18, 1994). This decision will allow users to select perfluoropolyethers in the event of performance or safety concerns while guarding against widespread, unnecessary use of these potent greenhouse gases.

### 3. Unacceptable

*a. Propellants.* (a) SF6. SF6 is an unacceptable substitute for CFC-11, CFC-12, HCFC-22 and HCFC-142b in aerosol applications. This chemical has been of commercial interest as a compressed gas propellant substitute for ozone-depleting propellants. However, it has an atmospheric lifetime of 3,200 years and a 100-year global warming potential (GWP) of 24,900. CFC-11, in contrast, has a lifetime of 50 years and a GWP of 4,000. Formulators have indicated to EPA that compressed gases such as CO<sub>2</sub> would work equally well to replace use of CFC-11 and other ozone-depleting propellants and could be formulated at similar or lower cost. CO<sub>2</sub> has a GWP of 1. CO<sub>2</sub> and other compressed gases such as nitrous oxide are already commercially popular due to low flammability and price and have been used extensively since the phaseout of CFCs in aerosols in 1978 in a wide variety of products such as spray pesticides, canned whipped cream, and cleaning products. Compressed gases

were approved under the SNAP program as substitute propellants in March 1994.

### 4. Amendment to List of Substances Being Replaced

EPA today is adding CFC-12 and CFC-114 to the list of aerosol propellants being replaced by substitutes reviewed under SNAP. This will ensure that companies replacing these CFCS in their products will be able to adhere to SNAP rulings in the replacement process. The environmental trade-offs associated with replacing CFC-12 and CFC-114 versus CFC-11 do not change significantly, since the ODPs for all the CFCs are roughly the same.

## IV. Administrative Requirements

### A. Executive Order 12866

Under Executive Order 12866 (58 FR 51735; October 4, 1993), the Agency must determine whether the regulatory action is "significant" and therefore subject to OMB review and the requirements of the 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 entitlement, grants, user fees, or loan programs or the rights and obligations 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, OMB notified EPA that it considers this a "significant regulatory action" within the meaning of the Executive Order, and EPA submitted this action to OMB for review. Changes made in response to OMB suggestions or recommendations have been documented in the public record.

### B. Unfunded Mandates Act

Section 202 of the Unfunded Mandates Reform Act of 1995 requires EPA to 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 one year. Section 203 requires the Agency to establish a plan for obtaining input from and informing any small governments that may be significantly or uniquely affected by the rule. Section 205 requires that regulatory alternatives be considered before promulgating a rule for which a budgetary impact statement is prepared. The Agency must select the least costly, most cost-effective, or least burdensome alternative that achieves the rule's objectives, unless there is an explanation why this alternative is not selected or 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 one 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.

### C. Regulatory Flexibility Act

EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with this final rule. Because costs of the SNAP requirements as a whole are expected to be minor, it is unlikely to adversely affect small businesses. In fact, to the extent that information gathering is more expensive and time-consuming for small companies, this rule may well provide benefits for small businesses anxious to examine potential substitutes to any ozone-depleting class I and class II substances they may be using, by requiring manufacturers to make information on such substitutes available.

### D. Paperwork Reduction Act

The information collection requirements in this rule have been approved by the Office of Management and Budget (OMB) under the *Paperwork Reduction Act*, 44 U.S.C. 3501 *et seq.* An Information Collection Request (ICR) document has been prepared by EPA. The OMB Control Number is 2060-0350. A copy may be obtained from Sandy Farmer, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2136); 401 M St., S.W.; Washington, DC 20460 or by calling (202) 260-2740. The reasons for these information requirements are explained in the section on automobile air conditioning (III.A.2.a). The requirements became

mandatory under section 612 of the Clean Air Act when the ICR was approved by OMB on September 11, 1996. The ICR was previously subject to public notice and comment prior to OMB approval. EPA, therefore finds "good cause" under section 553(b)(B) of the Administrative Procedure Act (5 U.S.C. 553(b)(B)) to amend this table without prior notice and comment. Due to the technical nature of the table, further notice and comment would be unnecessary. For the same reasons, EPA also finds that there is good cause under 5 U.S.C. 553(d)(3). Accordingly, EPA is amending the table of currently approved information collection request (ICR) control numbers issued by OMB. This amendment updates the table to accurately display those information requirements contained in this final rule. This display of the OMB control number and its subsequent codification in the Code of Federal Regulations satisfies the requirements of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*) and OMB's implementing regulations at 5 CFR 1320. EPA is applying the information requirements described above to this rulemaking, previous SNAP rulemakings, and future SNAP rulemakings. Accordingly, these paperwork requirements shall apply to SNAP decisions described in rules published on June 13, 1995 (60 FR 31092) and May 22, 1996 (61 FR 25585), in addition to this rule.

EPA estimates that the burden of learning about the requirements will be approximately ten minutes, and that filling out each required label itself will take approximately five minutes. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. EPA estimates the capital costs associated with the design, printing, and distribution of labels to be \$500,000 per year. Refer to EPA ICR 1774.01 for further details.

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information

unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

**V. 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).

**VI. Additional Information**

For copies of the comprehensive SNAP lists or additional information on SNAP please contact the Stratospheric Protection Hotline at 1-800-296-1996, Monday-Friday, between the hours of 10:00 a.m. and 4:00 p.m. (EST).

For more information on the Agency's process for administering the SNAP program or criteria for evaluation of substitutes, refer to the SNAP final rulemaking published in the Federal Register on March 18, 1994 (59 FR 13044). Federal Register publications can be ordered from the Government Printing Office Order Desk (202) 783-3238; the citation is the date of publication. All SNAP-related NPRMS, FRMs, and Notices may also be retrieved from EPA's Ozone Depletion World Wide Web site, at <http://www.epa.gov/docs/ozone/title6/snap/>.

**List of Subjects**

**40 CFR Part 9**

Reporting and recordkeeping requirements.

**40 CFR Part 82**

Environmental protection, Administrative practice and procedure, Air pollution control, Reporting and recordkeeping requirements.

Dated: October 8, 1996.

Carol M. Browner,

*Administrator.*

For the reasons set out in the preamble, 40 CFR parts 9 and 82 are amended as follows:

1. In part 9:
  - a. The authority citation for part 9 continues to read as follows:

Authority: 7 U.S.C. 135 *et seq.*, 136-136y; 15 U.S.C. 2001, 2003, 2005, 2006, 2601-2671; 21 U.S.C. 331j, 346a, 348; 31 U.S.C. 9701; 33 U.S.C. 1251 *et seq.*, 1311, 1313d, 1314, 1318, 1321, 1326, 1330, 1342, 1344, 1345 (d) and

(e), 1361; E.O. 11735, 38 FR 21243, 3 CFR, 1971-1975 Comp. p. 973; 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g-1, 300g-2, 300g-3, 300g-4, 300g-5, 300g-6, 300j-1, 300j-2, 300j-3, 300j-4, 300j-9, 1857 *et seq.*, 6901-6992k, 7401-7671q, 7542, 9601-9657, 11023, 11048.

b. Section 9.1 is amended by adding a new entry to the table under the indicated heading to read as follows:

**§ 9.1 OMB approvals under the Paperwork Reduction Act.**

40 CFR citation	OMB control No.
* * * * *	* * * * *
Protection of Stratospheric Ozone 82.180 .....	2060-0350
* * * * *	* * * * *

**PART 82—PROTECTION OF STRATOSPHERIC OZONE**

1. The authority citation for part 82 continues to read as follows:

Authority: 42 U.S.C. Sec. 7414, 7601, 7671-7671q.

2. Section 82.180 is amended by revising paragraph (a)(8)(ii) to read as follows:

**§ 82.180 Agency review of SNAP submissions.**

- (a) \* \* \*
- (8) \* \* \*

(ii) *Communication of Decision to the Public.* The Agency will publish in the Federal Register periodic updates to the list of the acceptable and unacceptable alternatives that have been reviewed to date. In the case of substitutes proposed as acceptable with use restrictions, proposed as unacceptable or proposed for removal from either list, a rulemaking process will ensue. Upon completion of such rulemaking, EPA will publish revised lists of substitutes acceptable subject to use conditions or narrowed use limits and unacceptable substitutes to be incorporated into the Code of Federal Regulations. (See Appendices to this subpart.)

\* \* \* \* \*

3. Subpart G is amended by adding the following Appendix D to read as follows:

**Subpart G—Significant New Alternatives Policy Program**

\* \* \* \* \*

Appendix D to Subpart G—Substitutes Subject to Use Restrictions and Unacceptable Substitutes

Summary of Decisions

Refrigeration and Air Conditioning Sector Acceptable Subject to Use Conditions

R-406A/“GHG”/“McCool”, “GHG-HP”, “GHG-X4”/“Autofrost”/“Chill-It”, and “Hot Shot”/“Kar Kool” are acceptable substitutes for CFC-12 in retrofitted motor vehicle air conditioning systems (MVACs) subject to the use condition that a retrofit to these refrigerants must include replacing non-barrier hoses with barrier hoses.

For all refrigerants submitted for use in motor vehicle air conditioning systems, subsequent to the effective date of this FRM, in addition to the information previously required in the March 18, 1994 final SNAP rule (58 FR 13044), SNAP submissions must include specifications for the fittings similar to those found in SAE J639, samples of all fittings, and the detailed label described below at the same time as the initial SNAP submission, or the submission will be considered incomplete. Under section 612 of the Clean Air Act, substitutes for which submissions are incomplete may not be sold or used, regardless of other acceptability determinations, and the prohibition against sale of a new refrigerant will not end until 90 days after EPA determines the submission is complete.

In addition, the use of a) R-406A/“GHG”/“McCool”, “GHG-HP”, “GHG-X4”/“Autofrost”/“Chill-It”, “Hot Shot”/“Kar Kool”, and “FREEZE 12” as CFC-12 substitutes in MVACs, and b) all refrigerants submitted for, and listed in, subsequent Notices of Acceptability as substitutes for CFC-12 in MVACs, must meet the following conditions:

1. Each refrigerant may only be used with a set of fittings that is unique to that refrigerant. These fittings (male or female, as appropriate) must be

designed by the manufacturer of the refrigerant. The manufacturer is responsible to ensure that the fittings meet all of the requirements listed below, including testing according to SAE standards. These fittings must be designed to mechanically prevent cross-charging with another refrigerant, including CFC-12.

The fittings must be used on all containers of the refrigerant, on can taps, on recovery, recycling, and charging equipment, and on all air conditioning system service ports. A refrigerant may only be used with the fittings and can taps specifically intended for that refrigerant and designed by the manufacturer of the refrigerant. Using a refrigerant with a fitting designed by anyone else, even if it is different from fittings used with other refrigerants, is a violation of this use condition. Using an adapter or deliberately modifying a fitting to use a different refrigerant is a violation of this use condition.

Fittings shall meet the following criteria, derived from Society of Automotive Engineers (SAE) standards and recommended practices:

a. When existing CFC-12 service ports are retrofitted, conversion assemblies shall attach to the CFC-12 fitting with a thread lock adhesive and/or a separate mechanical latching mechanism in a manner that permanently prevents the assembly from being removed.

b. All conversion assemblies and new service ports must satisfy the vibration testing requirements of section 3.2.1 or 3.2.2 of SAE J1660, as applicable, excluding references to SAE J639 and SAE J2064, which are specific to HFC-134a.

c. In order to prevent discharge of refrigerant to the atmosphere, systems shall have a device to limit compressor operation before the pressure relief device will vent refrigerant.

d. All CFC-12 service ports not retrofitted with conversion assemblies shall be rendered permanently incompatible for use with CFC-12 related service equipment by fitting

with a device attached with a thread lock adhesive and/or a separate mechanical latching mechanism in a manner that prevents the device from being removed.

2. When a retrofit is performed, a label must be used as follows:

a. The person conducting the retrofit must apply a label to the air conditioning system in the engine compartment that contains the following information:

i. The name and address of the technician and the company performing the retrofit.

ii. The date of the retrofit.

iii. The trade name, charge amount, and, when applicable, the ASHRAE refrigerant numerical designation of the refrigerant.

iv. The type, manufacturer, and amount of lubricant used.

v. If the refrigerant is or contains an ozone-depleting substance, the phrase “ozone depleter”.

vi. If the refrigerant displays flammability limits as measured according to ASTM E681, the statement “This refrigerant is FLAMMABLE. Take appropriate precautions.”

b. The label must be large enough to be easily read and must be permanent.

c. The background color must be unique to the refrigerant.

d. The label must be affixed to the system over information related to the previous refrigerant, in a location not normally replaced during vehicle repair.

e. In accordance with SAE J639, testing of labels must meet ANSI/UL 969-1991.

f. Information on the previous refrigerant that cannot be covered by the new label must be rendered permanently unreadable.

3. No substitute refrigerant may be used to “top-off” a system that uses another refrigerant. The original refrigerant must be recovered in accordance with regulations issued under section 609 of the CAA prior to charging with a substitute.

SOLVENT CLEANING SECTOR

[Acceptable Subject to Use Conditions Substitutes]

Application	Substitute	Decision	Conditions	Comments
Electronics Cleaning w/CFC-113 and MCF.	HFC-4310mee .....	Acceptable .....		Subject to a 200 ppm time-weighted average workplace exposure standard and a 400 ppm workplace exposure ceiling.
Precision Cleaning w/CFC-113 and MCF.	HFC-4310mee .....	Acceptable .....		Subject to a 200 ppm time-weighted average workplace exposure standard and a 400 ppm workplace exposure ceiling.

**SOLVENT SECTOR**

[Acceptable Subject to Narrowed Use Limits]

Application	Substitute	Decision	Comments
Electronics Cleaning w/ CFC-113 and MCF.	Perfluoropolyethers .....	Perfluoropolyethers are acceptable substitutes for CFC-113 and MCF in the precision cleaning sector for high performance, precision-engineered applications only where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements.	PFPEs have similar global warming profile to the PFCs, and the SNAP decision on PFPEs parallels that for PFCs.
Precision Cleaning w/ CFC-113 and MCF.	Perfluoropolyethers .....	Perfluoropolyethers are acceptable substitutes for CFC-113 and MCF in the precision cleaning sector for high performance, precision-engineered applications only where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements.	PFPEs have similar global warming profile to the PFCs, and the SNAP decision on PFPEs parallels that for PFCs.

**Unacceptable Substitutes**

End-use	Substitute	Decision	Comments
Electronics Cleaning w/ CFC-113 and MCF.	HCFC-141b .....	Extension of existing unacceptability determination to grant existing uses in high-performance electronics permission to continue until January 1, 1997.	This determination extends the use date for HCFC-141b in solvent cleaning, but only for existing users in high-performance electronics and only for one year.
Precision Cleaning w/ CFC-113 and MCF.	HCFC-141b .....	Extension of existing unacceptability determination to grant existing uses in precision cleaning permission to continue until January 1, 1997.	This determination extends the use date for HCFC-141b in solvent cleaning, but only for existing users in precision cleaning and only for one year.

**AEROSOLS SECTOR**

Acceptable Subject to Narrowed Use Limits

Application	Substitute	Decision	Comments
CFC-113, MCF, and HCFC-141b as aerosol solvents.	Perfluorocarbons .....	Perfluorocarbons are acceptable substitutes for aerosol applications only where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements.	PFCs have extremely long atmospheric lifetimes and high Global Warming Potentials. This decision reflects these concerns and is patterned after the SNAP decision on PFCs in the solvent cleaning sector.
	Perfluoropolyethers .....	Perfluorocarbons are acceptable substitutes for aerosol applications only where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements.	PFPEs have similar global warming profile to the PFCs, and the SNAP decision on PFPEs parallels that for PFCs in the solvent cleaning sector.

**Unacceptable Substitutes**

End-use	Substitute	Decision	Comments
CFC-11, CFC-12, HCFC-22, and HCFC-142b as aerosol propellants.	SF6 .....	Unacceptable .....	SF6 has the highest GWP of all industrial gases, and other compressed gases meet user needs in this application equally well.

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