ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 82

[FRL–6355–8]

Protection of Stratospheric Ozone

AGENCY: Environmental Protection Agency.

ACTION: Notice of acceptability.

SUMMARY: This document expands the list of acceptable substitutes for ozone-depleting substances (ODS) under the U.S. Environmental Protection Agency's (EPA) Significant New Alternatives Policy (SNAP) program.

EFFECTIVE DATE: June 8, 1999.

ADDRESSES: Information relevant to this document is contained in Air Docket A–91–42, Central Docket Section, South Conference Room 4, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, telephone: (202) 260–7548. The docket may be inspected between 8:00 a.m. and 5:30 p.m. weekdays. As provided in 40 CFR part 2, a reasonable fee may be charged for photocopying.

FOR FURTHER INFORMATION CONTACT: Kelly Davis at (202) 564–2303 or fax (202) 565–2096, U.S. EPA, Stratospheric Protection Division, 401 M Street, S.W., Mail Code 6205J, Washington, D.C. 20460; EPA Stratospheric Ozone Protection Hotline at (800) 296–1996; EPA World Wide Web Site (http://www.epa.gov/ozone/title6/snap).

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I. 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 substance to or delete a substance 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 6 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; solvents cleaning; fire suppression and explosion protection; sterilants; aerosols; adhesives, coatings and inks; and tobacco expansion. These sectors compose the principal industrial sectors that historically consumed the largest volumes of ozone-depleting compounds.

As described in the original rule for the SNAP program (59 FR 13044; March 18, 1994), 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 substance. Consequently, by this document EPA is adding substances to the list of acceptable alternatives without first requesting comment on new listings.

EPA does, however, believe that Notice-and-Comment rulemaking is required to place any substance on the list of prohibited substitutes, to list a substance as acceptable only under certain conditions, to list substances as acceptable only for certain uses, or to remove a substance from either the list of prohibited or acceptable substitutes. Updates to these lists are published as separate notices of rulemaking in the **Federal Register**.

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 substitute manufacturers, but may include importers, formulators or end-users, when they are responsible for introducing a substitute into commerce.

EPA published documents listing acceptable alternatives on August 26, 1994 (59 FR 44240), January 13, 1995 (60 FR 3318), July 28, 1995 (60 FR 38729), February 8, 1996 (61 FR 4736), September 5, 1996 (61 FR 47012), March 10, 1997 (62 FR 10700), June 3, 1997 (62 FR 30275), February 24, 1998 (63 FR 9151), and May 22, 1998 (63 FR 28251), and published Final Rulemakings restricting or prohibiting the use of certain substitutes on March 18, 1994 (59 FR 13044), June 13, 1995 (60 FR 31092), May 22, 1996 (61 FR 25585), October 16, 1996 (61 FR 54029), January 26, 1999 (64 FR 3861), January 26, 1999 (64 FR 3865), and March 3, 1999 (64 FR 10374), April 28, 1999 (64 FR 22981).

II. Listing of Acceptable Substitutes

This section presents EPA's most recent acceptable listing decisions for substitutes for class I and class II substances in the refrigeration and air conditioning; foam blowing; solvents cleaning; aerosols; and adhesives, coatings, and inks sectors. For copies of

the full list of SNAP decisions in all industrial sectors, contact the EPA Stratospheric Protection Hotline at (800) 296–1996.

Parts A through E below present a detailed discussion of the substitute listing determinations by major use sector. The table summarizing today's listing decisions is in Appendix A. The comments contained in Appendix A provide additional information on a substitute, but for listings of acceptable substitutes, they are not legally binding under section 612 of the Clean Air Act. Thus, adherence to recommendations in the comments is not mandatory for use of a substitute. In addition, the comments should not be considered comprehensive with respect to other legal obligations pertaining to the use of the substitute. However, EPA encourages users of acceptable substitutes to apply all comments to their use 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. Acceptable Substitutes

Under section 612 of the Clean Air Act, EPA is authorized to review substitutes for class I (CFC) and class II (HCFC) chemicals. The decisions set forth in this section A expand the acceptable listing for refrigerants.

In listing these refrigerants as acceptable, EPA anticipates that these refrigerants will be used in such a manner so that any recommendations specified in the manufacturers' Material Safety Data Sheets (MSDSs) are followed. EPA also anticipates that manufacturers, installers, servicers, building owners and other parties responsible for construction and maintenance of refrigeration and air-conditioning systems will follow all applicable standard industry practices and technical standards established by voluntary consensus standards organizations such as the American National Standards Institute (ANSI). The Agency also expects that refrigerating systems will conform to all relevant provisions of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) standards, including Standard 15, Safety Code for Mechanical Refrigeration, which provides guidelines for the safety of persons and property on or near premises where refrigeration facilities are located. Finally, the Agency anticipates that any exposures by installers or servicers to refrigerants will conform to all applicable standards set by the U.S. Occupational Safety and Health Administration (OSHA) and will not exceed any acceptable exposure limits set by any voluntary consensus standards organization, including the American Conference of Governmental Industrial Hygienists' (ACGIH) threshhold limit values (TLVs) or the American Industrial Hygiene Association's (AIHA) workplace environmental exposure limits (WEELs).

(a) THR–04. The chemical blend submitted to EPA with the unregistered tradename THR–04 is acceptable as a substitute for R–502 in all end-uses. Tsinghua University of Beijing and the Beijing Inoue Qinghua Refrigeration Technology Company, the joint submitters of THR–04, claim that its composition is confidential business information. Fractionation and flammability testing have determined that although one constituent of the blend is flammable, THR–04 as blended is not, and further testing has shown that it does not become flammable after leakage. This blend contains an HCFC and for this reason is an ozone depleter. However, the HCFC is a class II ozone depleter and is an acceptable substitute for the class I ozone depleter, R–502. THR–04 contains a constituent with a high global warming potential (GWP). However, the potential of this constituent for contributing to global warming will be mitigated in each end-use through the implementation of the venting prohibition under section 608(c)(2) of the Clean Air Act.

(b) HFC–236fa. HFC–236fa, when manufactured using any process that does not convert perfluoroisobutylene (PFIB) directly to HFC–236fa in a single step, is acceptable as a substitute for CFC–114 in non-mechanical heat transfer. HFC–236fa does not harm the ozone layer because it does not contain chlorine. Although HFC–236fa has an extremely high 100-year GWP of 6,300,[1] its lifetime is at least an order of magnitude shorter than that of perfluorocarbons (PFCs), which have comparable 100-year GWPs. For some specialized non-mechanical heat transfer end-uses, HFC–236fa is the only CFC–114 alternative that is safe for the ozone layer and is low in toxicity. HFC–236fa may not be vented when used as a refrigerant, in accordance with section 608(c)(2) of the Act. EPA has proposed new recycling regulations for non-ozone-depleting refrigerants (63 FR 32044; June 11, 1998). This proposal would extend to HFC and PFC refrigerants the requirements currently in place for class I (CFC) and class II (HCFC) refrigerants, including required service practices, certification programs for recovery/recycling equipment, reclaimers, and technicians, a prohibition on the sale of refrigerant to anyone but certified technicians, leak repair requirements, and safe disposal requirements. A fact sheet on the proposal is available from the EPA Ozone Hotline at (800) 296–1996 or on the world wide web at http://www.epa.gov/ozone/title6/608/subrecsm.html.

(c) HFE–7100. Hydrofluoroether (HFE–7100) ($C_4F_9OCH_3$; methoxynonafluorobutane, iso and normal) is an acceptable substitute for CFC–113 in non-mechanical heat transfer. HFE–7100 does not deplete the ozone layer since it does not contain chlorine or bromine. It has a 4.1 year atmospheric lifetime and a GWP of 500 over a 100-year time horizon. The GWP and lifetime for this HFE are lower than the GWP and lifetime for CFC–113, and this HFE exhibits low toxicity, with a WEEL of 750 ppm.

(d) HFC–23. HFC–23 is acceptable as a substitute for CFC–12 in very low-temperature refrigeration. (Readers of this section should also note the clarification of the definition of very-low-temperature refrigeration set forth in section 2 below.) HFC–23 has already been listed as an acceptable substitute for CFC–13, R–13B1, and R–503 in very-low-temperature refrigeration and industrial process refrigeration. It is non-flammable and does not deplete stratospheric ozone. However, HFC–23 has an extremely high 100-year GWP of 11,700 relative to CO_2 and an atmospheric lifetime of 264 years. Its GWP is the highest among the HFCs, and its lifetime is exceeded only by the PFCs. Consequently, EPA believes HFC–23 could contribute significantly to global warming. In addition, the long lifetime of HFC–23 means any global warming or other effects would be essentially irreversible. It is illegal to vent HFC–23 at any time when used as a refrigerant. The current regulations issued under section 608 of the CAA (58 FR 28660; May 14, 1993) do not require recycling and recovery of HFC–23, or

[1] GWPs and atmospheric lifetimes cited in this document are from the Intergovernmental Panel on Climate Change (IPCC) report entitled *Climate Change 1995—The Science of Climate Change*, IPCC Second Assessment Report. More recent values for GWPs and atmospheric lifetimes published in the *Scientific Assessment of Ozone Depletion: 1998*, World Meteorological Organization Global Ozone Research and Monitoring Project—Report No. 44, may be somewhat different than the values cited here but do not alter any of the technical or policy determinations by EPA in this rule.

leak repair for systems using HFC–23. In particular, EPA urges users to reduce leakage and recover and recycle HFC–23 during equipment servicing and upon the retirement of equipment and adhere to the amended leak repair provisions established in 60 FR 40419; August 8, 1995. EPA has proposed new recycling regulations for non-ozone-depleting refrigerants (63 FR 32044; June 11, 1998). This proposal would extend to HFC and PFC refrigerants the requirements currently in place for class I (CFC) and class II (HCFC) refrigerants, including required service practices, certification programs for recovery/recycling equipment, reclaimers, and technicians, a prohibition on the sale of refrigerant to anyone but certified technicians, leak repair requirements, and safe disposal requirements. A fact sheet on the proposal is available from the EPA Ozone Hotline at (800) 296–1996 or on the world wide web at http://www.epa.gov/ozone/title6/608/subrecsm.html.

(e) Motor Vehicle Air-Conditioning: thermal storage systems used in tractor trailers in conjunction with passenger compartment climate control systems that use a SNAP-accepted refrigerant. Thermal storage systems used in a tractor trailer in conjunction with a conventional motor vehicle air-conditioning system that already uses an acceptable substitute refrigerant, are acceptable as substitutes for CFC–12 in motor vehicle air conditioners. These systems have been developed for use in heavy duty trucks that contain sleeper compartments. Currently these trucks must continually idle while the vehicle is parked and the driver is resting in the sleeper compartment, to power a conventional air-conditioner or heater when cooling or heating comfort is needed. These thermal storage systems will allow the provision of cooling/heating comfort while the engine is off.

The thermal storage system uses water blended with small amounts of one or more of the SNAP acceptable HFC-based refrigerants such as HFC–134a. The blend is contained in a sealed storage device. The system consists of a packaged cool storage reservoir and a fuel-fired heater that generates cooling or heating capacity during the normal operation of the vehicle. This cooling or heating capacity becomes available for use in the passenger compartment at a desired time. The cooling capacity is generated by chilling a circulating coolant with air from the air conditioner, while the heating capacity is achieved by heating this same coolant with a fuel-fired heater. The coolant functions as a secondary fluid in a secondary-loop refrigeration system similar to chilled water in building chillers.

After reviewing the technology of the thermal storage system submitted in the SNAP application, EPA found no safety or environmental concerns associated with its use in trucks. EPA acknowledges the existence of such a system and recognizes the potential merits. This type of technology promises to significantly lower fuel consumption and reduce pollutant emissions, including nitrous oxides, carbon monoxide, carbon dioxide, sulfuric oxides, and particulate emissions.

2. Clarification

(a) Very-low-temperature refrigeration. In a previous rule (60 FR 31092; June 13, 1995), EPA stated in its definition of very-low-temperature refrigeration that ''[m]edical freezers, freeze-dryers, and other small appliances require extremely reliable refrigeration cycles. These systems must meet stringent technical standards that do not normally apply to refrigeration systems.'' EPA does not intend to limit the very-low-temperature refrigeration application to medical freezers, freeze-dryers and other small appliances. Larger systems may also fall within the definition of very-low-temperature refrigeration, as long as the systems or portions of the systems require very low temperatures in the vicinity of -80 degrees F or lower. Submitters to the SNAP program who believe that particular systems may qualify as very-low-temperature refrigeration and/or industrial process refrigeration should contact EPA for a determination prior to submitting substitute refrigerants for review under the SNAP program.

B. Foam Blowing

1. Acceptable Substitutes

(a) HFC–134a. HFC–134a is an acceptable substitute for HCFCs in all foam blowing end-uses. For end-uses other than rigid polyurethane and polyisocyanurate laminated boardstock, polystyrene extruded boardstock and billet foams, phenolic foams, and polyolefin foams, blends of HFC–134a with other acceptable substitutes are also acceptable substitutes for HCFCs. See the original SNAP rule (53 FR 13044) for a detailed explanation of the distinction among end-uses for which blends are acceptable without further review. HFC–134a has zero ODP, has a 100-year GWP of 1300, and is nonflammable. HFC–134a has low toxicity, with a WEEL of 1000 ppm.

(b) HFC–152a. HFC–152a is an acceptable substitute for HCFCs in all foam blowing end-uses. For end-uses other than rigid polyurethane and polyisocyanurate laminated boardstock, polystyrene extruded boardstock and billet foams, phenolic foams, and polyolefin foams, blends of HFC–152a with other acceptable substitutes are also acceptable substitutes for HCFCs. See the original SNAP rule (53 FR 13044) for a detailed explanation of the distinction among end-uses for which blends are acceptable without further review. HFC–152a is flammable; foams blown with HFC–152a will need to conform to building code requirements that relate to flammable materials. HFC–152a has zero ODP, a 100-year GWP of 140, and low toxicity. The WEEL for HFC–152a is 1000 ppm.

(c) Carbon Dioxide. Carbon Dioxide (CO_2) is an acceptable substitute for HCFCs in all foam blowing end-uses. For end-uses other than rigid polyurethane and polyisocyanurate laminated boardstock, polystyrene extruded boardstock and billet foams, phenolic foams, and polyolefin foams, blends of CO_2 with other acceptable substitutes are also acceptable substitutes for HCFCs. See the original SNAP rule (53 FR 13044) for a detailed explanation of the distinction among end-uses for which blends are acceptable without further review. CO_2 has zero ODP, a GWP of 1, low toxicity, and is nonflammable.

(d) Water. Water is an acceptable substitute for HCFCs in all foam blowing end-uses. For end-uses other than rigid polyurethane and polyisocyanurate laminated boardstock, polystyrene extruded boardstock and billet foams, phenolic foams, and polyolefin foams, blends of water with other acceptable substitutes are also acceptable substitutes for HCFCs. See the original SNAP rule (53 FR 13044) for a detailed explanation of the distinction among end-uses for which blends are acceptable without further review. Water has zero ODP and GWP, is not toxic, and is nonflammable.

2. Clarification

On September 5, 1996 (61 FR 47012), EPA listed proprietary blend 1 (PBA 1) as an acceptable substitute for CFCs and HCFCs in rigid polyurethane and polyisocyanurate laminated boardstock foam; rigid polyurethane appliance; rigid polyurethane slabstock and other; and rigid polyurethane spray and commercial refrigeration, and sandwich panels. At the time PBA 1 was submitted, the submitter's identification and the composition of PBA 1 were claimed as confidential business information. The confidentiality of the composition has been withdrawn, and

EPA now discloses that PBA 1 is formic acid. On February 28, 1998 (63 FR 9151), EPA listed formic acid as an acceptable substitute for CFC and HCFCs in polyurethane integral skin foam. In future lists of acceptable substitutes, EPA will combine these listings.

C. Solvents Cleaning

1. Acceptable Substitutes

(a) HFC–4310mee. HFC–4310mee is acceptable as a substitute for HCFC–141b in all solvents cleaning end-uses. HFC–4310mee is listed as acceptable subject to use conditions in the metals cleaning and aerosol solvent sectors (64 FR 22981, April 28, 1999) as a substitute for CFC–113 and methyl chloroform. It is already acceptable in electronics and precision cleaning subject to a 200 ppm time-weighted average workplace exposure standard and a 400 ppm workplace exposure ceiling (61 FR 54029; October 16, 1996).

This document clarifies that HFC–4310mee is also acceptable as a substitute for HCFC–141b. HCFC–141b is scheduled for complete phaseout in 2003 and is currently unacceptable for use in all sectors except for very specific aerosol uses. The exemptions to the ban under Clean Air Act section 610 include use for specific medical devices, aircraft maintenance, mold release agents, spinnerettes, document preservation sprays, photographic equipment, and wasp and hornet sprays used near high-tension wires (58 FR 69638; December 30, 1993). Note that the ban under section 610 is for all class II substances.

2. Clarification

(a) All Solvents Cleaning End-uses. (1) Benzotrifluoride (CAS# 98–08–8). This notice of clarification serves to list benzotrifluoride ($C_7H_5F_3$) as acceptable with an acceptable exposure limit (AEL) of 100 ppm. Monochlorotoluenes/ benzotrifluorides are acceptable subject to use conditions as substitutes for CFC–113 and MCF in all solvent end-uses. The category of monochlorotoluenes/ benzotrifluoride has been listed with a company-established acceptable exposure limit of 50 ppm workplace standard for monochlorotoluenes and a 25 ppm standard for benzotrifluoride (61 FR 25585; May 22, 1996). Of all the structures of commercial interest, the only chemical with an Occupational Safety and Health Administration (OSHA) standard is orthochlorotoluene, one of the monochlorotoluenes. This substance has an OSHA Permissible Exposure Level (PEL) of 50 ppm. Using this standard as a proxy, the Agency set a workplace standard of 50 ppm for monochlorotoluenes as a group. Benzotrifluoride does not have a PEL. Further testing has demonstrated that benzotrifluoride is one of the least toxic chemicals in the category of monochlorotoluenes/ benzotrifluoride. As such, the company-set acceptable exposure limit for benzotrifluoride is 100 ppm.

D. Aerosols

1. Acceptable Substitutes

(a) Aerosol solvents. (1) HFC–4310mee. HFC–4310mee is acceptable as a substitute for HCFC–141b in all aerosol solvent end-uses. For a complete discussion, please refer to the solvents cleaning section above.

2. Clarification

(a) Aerosol Solvents. (1) Benzotrifluoride (CAS# 98–08–8). This notice of clarification serves to list benzotrifluoride ($C_7H_5F_3$) as acceptable with an acceptable exposure limit (AEL) of 100 ppm. For a complete discussion, please refer to the solvent section above.

E. Adhesives, Coatings, and Inks

1. Clarification

(a) Benzotrifluoride (CAS# 98–08–8). This notice of clarification serves to list benzotrifluoride ($C_7H_5F_3$) as acceptable with an acceptable exposure limit (AEL) of 100 ppm. For a complete discussion, please refer to the solvent section above.

III. Additional Information

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. (Eastern Standard Time). 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). Notices and rulemakings under the SNAP program, as well as all EPA publications on protection of stratospheric ozone, are available from EPA's Ozone Depletion World Wide Web site at ''http://www.epa.gov/ozone/title6/snap/'' and from the Stratospheric Protection Hotline whose number is listed above.

List of Subjects in 40 CFR Part 82

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

Dated: May 27, 1999.

Paul Stolpman,

Director, Office of Atmospheric Programs, Office of Air and Radiation.

APPENDIX A—SUMMARY OF ACCEPTABLE DECISIONS

End-Use	Substitute	Decision	Comments
REFRIGERATION and AIR CONDITIONING SECTOR			
All R–502 end-uses	THR–04	Acceptable	EPA anticipates that manufacturers, installers and servicers of refrigeration and air-conditioning systems will follow all applicable standard industry practices and technical standards.
Non-mechanical heat transfer	HFC–236fa	Acceptable as a substitute for CFC-114 in non-mechanical heat transfer when manufactured using any process that does not convert perfluoroisobutylene (PFIB) directly to HFC–236fa in a single step.	EPA anticipates that manufacturers, installers and servicers of refrigeration and air-conditioning systems will follow all applicable standard industry practices and technical standards.

APPENDIX A—SUMMARY OF ACCEPTABLE DECISIONS—Continued

End-Use	Substitute	Decision	Comments
Non-mechanical heat transfer	HFE–7100	Acceptable	EPA anticipates that manufacturers, installers and servicers of refrigeration and air-conditioning systems will follow all applicable standard industry practices and technical standards.
Very-low-temperature refrigeration	HFC–23	Acceptable	This determination applies where the ozone-depleting substance being replaced is CFC–12. EPA anticipates that manufacturers, installers and servicers of refrigeration and air-conditioning systems will follow all applicable standard industry practices and technical standards.
Motor vehicle air conditioning	Thermal storage systems used in tractor trailers in conjunction with passenger compartment climate control systems that use SNAP-accepted refrigerants.	Acceptable	EPA anticipates that installers and servicers of refrigeration and air-conditioning systems will follow all applicable standard industry practices and technical standards.
FOAMS SECTOR			
HCFCs used in all end-uses but rigid polyurethane and polyisocyanurate laminated boardstock, polystyrene extruded boardstock and billet foams, phenolic foams, and polyolefin foams.	HFC–134a, HFC–152a, CO2, water (and blends of any of these with other fully acceptable substitutes).	Acceptable.	
HCFCs used in rigid polyurethane and polyisocyanurate laminated boardstock, polystyrene extruded boardstock and billet foams, phenolic foams, and polyolefin foams.	HFC–134a, HFC–152a, CO_2, water.	Acceptable.	
SOLVENTS SECTOR			
All end-uses	HFC–4310mee	Acceptable subject to a 200 ppm time-weighted average workplace exposure standard and 400 ppm workplace exposure ceiling.	
All end-uses	Benzotrifluoride	Acceptable with an acceptable exposure limit (AEL) of 100 ppm.	
AEROSOLS SECTOR			
Aerosol Solvents	HFC–4310mee	Acceptable subject to a 200 ppm time-weighted average workplace exposure standard and 400 ppm workplace exposure ceiling.	
Aerosol Solvents	Benzotrifluoride	Acceptable with an acceptable exposure limit (AEL) of 100 ppm.	
ADHESIVES, COATINGS, and INKS SECTOR			
All end-uses	Benzotrifluoride	Acceptable with an acceptable exposure limit (AEL) of 100 ppm.	

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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 85

[FRL–6352–1]

Retrofit/Rebuild Requirements for 1993 and Earlier Model Year Urban Buses; Status of Equipment Certified and Emissions Levels to be Used by Operators Using Compliance Option 2

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of availability.

SUMMARY: In an amendment (63 FR 14626, March 26, 1998) to the rule regarding retrofit/rebuild requirements for 1993 and earlier model year urban buses, EPA stated that it would review retrofit/rebuild equipment that was certified by July 1, 1998 and publish the post-rebuild particulate matter (PM) emission levels for urban bus engines affected by the program. Post-rebuild levels are used by operators for calculating target emission levels of their fleets under compliance Option 2. Today's **Federal Register** document fulfills EPA's obligation to review equipment certified by July 1, 1998, and to publish the post-rebuild PM levels.

DATES: This document is effective as of June 8, 1999.

ADDRESSES: This document, as well as other materials relevant to the final rule, is contained in Public Docket A–91–28. This docket is located in room M–1500, Waterside Mall (ground floor), U.S. Environmental Protection Agency, 401 ''M'' Street, SW, Washington, DC 20460.

Dockets may be inspected from 8:00 am until 5:30 p.m., Monday through Friday. As provided in 40 CFR Part 2, a reasonable fee may be charged by the Agency for copying docket materials.

FOR FURTHER INFORMATION CONTACT: William Rutledge, Engine Programs and Compliance Division (6403J), U.S. Environmental Protection Agency, 401 M Street SW, Washington, D.C. 20460. Telephone: (202) 564–9297. Email: RUTLEDGE.WILLIAM@EPA.GOV.

SUPPLEMENTARY INFORMATION:

I. Background

Section 219(d) of the Clean Air Act requires EPA to promulgate regulations that require certain 1993 and earlier model year urban buses having engines replaced or rebuilt after January 1, 1995, to comply with an emission standard or control technology reflecting the best retrofit technology and maintenance practices reasonably achievable. On April 21, 1993, EPA published the final Retrofit/Rebuild Requirements for 1993 and Earlier Model Year Urban Buses (58 FR 21359).

The Urban Bus Retrofit/Rebuild Program requires affected operators of urban buses to choose between two compliance options. Option 1 establishes particulate matter (PM) emissions requirements for each urban bus in an operator's fleet whose engine is rebuilt or replaced. These requirements are to be met by the use of certified PM-reducing equipment. Option 2 is a fleet averaging program that specifies annual target levels for average PM emissions from all the pre-1994 model year urban buses in an operator's fleet. The April 1993 final rule states that EPA will determine post-rebuild levels to be used by operators for calculating their target fleet emission levels under the Option 2 averaging program. These emission levels are to be linked to equipment that is certified for use under compliance Option 1 and that meets an appropriate maximum life cycle cost requirement. The linkage of Option 2's post-rebuild levels to equipment certified under Option 1 assures that the two compliance options will produce equivalent emissions reductions.

The final rule divided Option 2 into two phases, the first applicable to the calculations of target fleet emission levels for calendar years 1996 and 1997, and the second applicable to the calculations for 1998 and thereafter. In the preamble to the final rule, EPA stated that it would review the retrofit/rebuild equipment that was certified by July 1, 1994 and again by July 1, 1996, and publish the respective post-rebuild emission levels for urban bus engines affected by the program. These reviews and updates of post-rebuild levels were necessary because EPA expected increasing numbers of kits to be certified as the program progressed, but as stated in the preamble to the final rule, EPA believed that all equipment likely to be available under the program would be certified by July 1, 1996. EPA first published post-rebuild levels based on equipment certified by July 1, 1994 in a **Federal Register** document dated September 2, 1994 (59 FR 45626). EPA subsequently updated the post-rebuild levels, based on equipment certified by July 1, 1996, in a **Federal Register** document dated August 16, 1996 (61 FR 42764).

In an amendment to the rule (63 FR 14626; March 26, 1998), EPA provided for the review of equipment certified by July 1, 1998, and the corresponding revision of the post-rebuild levels as necessary. This amendment was necessary because certification of equipment was not proceeding at the pace originally expected, and EPA had certified several kits to the 0.10 g/bhp-hr standard after July 1996 that could not influence the post-rebuild levels revised in the August 16, 1996 **Federal Register** document. Today's corresponding post-rebuild level revision is necessary to assure that the two program compliance options remain equivalent in terms of emissions reductions. No further updates of the post-rebuild levels are contemplated, because most of the affected buses are expected to be retired from the fleet roughly by year 2008.

Today's **Federal Register** document fulfills EPA's obligation to review equipment certified by July 1, 1998, and to update the post-rebuild PM levels accordingly. The emission levels contained in today's document must be used by transit operators using Option 2 for determining their Target Level for the Fleet (TLF) for calendar years 2000 and thereafter, in accordance with 40 CFR 85.1403(c)(1)(iv). Operators using Option 2 are expected to take fleet actions no later than calendar year 1999 to ensure compliance with their TLF beginning in calendar year 2000.

Publication of today's document was delayed pending outcome of an Agency investigation concerning electronically-controlled engines equipped by the original manufacturers with strategies designed to decrease fuel consumption during certain driving modes that are not substantially included in the federal test procedure. The effect of such strategies is to substantially increase NOx emissions during these modes. Such electronic control strategies are considered by the Agency to be ''defeat devices'' as defined at 40 CFR 86.094–22, and thus would violate 40 CFR 85.1406 and 85.1408 if included in an urban bus retrofit application.

As a result of our concern about the harmful effect of these defeat devices, certification of kits designed to meet the 0.10 g/bhp-hr standard which happened to include these defeat devices, was made conditional. The conditions have been removed following the implementation of revisions to the fuel injection timing strategy of the kits to deal with the NOx emissions issue.

II. Review of Certified Equipment and Program Requirements

As of July 1, 1998, several equipment kits have been certified for 6V92TA engine models (both MUI and DDEC II) to meet the 0.10 g/bhp-hr standard for less than the applicable life cycle cost