• does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

The SIP is not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the rule does not have tribal implications as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), nor will it impose substantial direct costs on tribal governments or preempt tribal law.

The Congressional Review Act, 5 U.S.C. 801 *et seq.,* as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this action and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

Under section 307(b)(1) of the CAA, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by September 19, 2017. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. Parties with objections to this direct final rule are encouraged to file a comment in response to the parallel notice of proposed rulemaking for this action published in the proposed rules section of today's **Federal Register**, rather than file an immediate petition for judicial review of this direct final rule, so that EPA can withdraw this direct final rule and address the comment in the proposed rulemaking. This action may not be challenged later in proceedings to enforce its requirements. *See* section 307(b)(2).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Particulate matter, Reporting and recordkeeping requirements, Volatile organic compounds.

Dated: July 7, 2017.

V. Anne Heard,

Acting Regional Administrator, Region 4.

40 CFR part 52 is amended as follows:

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

■ 1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

Subpart K—Florida

§ 52.520 [Amended]

■ 2. Section 52.520(c) is amended by removing the entries for ''62–210.100,'' ''62–212.100,'' ''62–297.100,'' and ''62–296.407.''

[FR Doc. 2017–15268 Filed 7–20–17; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 82

[EPA–HQ–OAR–2003–0118; FRL–9964–73–OAR]

RIN 2060–AG12

Protection of Stratospheric Ozone: Determination 33 for Significant New Alternatives Policy Program

AGENCY: Environmental Protection Agency (EPA).

ACTION: Determination of acceptability.

SUMMARY: This determination of acceptability expands the list of acceptable substitutes pursuant to the U.S. Environmental Protection Agency's (EPA) Significant New Alternatives Policy (SNAP) program. This action lists as acceptable additional substitutes for use in the refrigeration and air conditioning sector and the cleaning solvents sector.

DATES: This determination is applicable on July 21, 2017.

ADDRESSES: EPA established a docket for this action under Docket ID No. EPA–HQ–OAR–2003–0118 (continuation of Air Docket A–91–42). All electronic documents in the docket are listed in the index at *www.regulations.gov.* Although listed in the index, some information is not publicly available, *i.e.,* Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Publicly available docket materials are available either electronically at *www.regulations.gov* or in hard copy at the EPA Air Docket (Nos. A–91–42 and EPA–HQ–OAR–2003–0118), EPA Docket Center (EPA/DC), William J. Clinton West, Room 3334, 1301 Constitution Avenue NW., Washington, DC 20460. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the Air Docket is (202) 566–1742.

FOR FURTHER INFORMATION CONTACT: Gerald Wozniak by telephone at (202) 343–9624, by email at *wozniak.gerald@epa.gov,* or by mail at U.S. Environmental Protection Agency, Mail Code 6205T, 1200 Pennsylvania Avenue NW., Washington, DC 20460. Overnight or courier deliveries should be sent to the office location at 1201 Constitution Avenue NW., Washington, DC 20004.

For more information on the Agency's process for administering the SNAP program or criteria for the evaluation of substitutes, refer to the initial SNAP rulemaking published in the **Federal Register** on March 18, 1994 (59 FR 13044). Notices and rulemakings under the SNAP program, as well as other EPA publications on protection of stratospheric ozone, are available at EPA's Ozone Layer Protection Web site at *www.epa.gov/ozone-layer-protection* including the SNAP portion at *www.epa.gov/snap/.*

SUPPLEMENTARY INFORMATION:

Table of Contents

I. Listing of New Acceptable Substitutes

This action presents EPA's most recent decision to list as acceptable several substitutes in the refrigeration and air conditioning sector and the cleaning solvents sector. New substitutes are:

• Hydrofluorocarbon (HFC)-134a in residential and light commercial air conditioning and heat pumps (retrofit equipment);

• Hydrofluoroether (HFE)-7300 in non-mechanical heat transfer systems (new and retrofit equipment);
• R-407H in retail food refrigeration—remote condensing units (new and retrofit equipment);
• R-442A in retail food refrigeration—remote condensing units (new and retrofit equipment);
• R-448A in multiple refrigeration and air conditioning end-uses (new and retrofit equipment);
• R-449A in multiple refrigeration and air conditioning end-uses (new and retrofit equipment);
• R-449B in multiple refrigeration and air conditioning end-uses (new and retrofit equipment);
• R-452A in multiple refrigeration and air conditioning end-uses (new and retrofit equipment);
• R-452C in multiple refrigeration and air conditioning end-uses (new and retrofit equipment);
• R-453A in multiple refrigeration and air conditioning end-uses (new and retrofit equipment);
• R-458A in multiple refrigeration and air-conditioning end-uses (new and retrofit equipment);
• R-513A in residential dehumidifiers (new and retrofit equipment); and
• HFE-7300 in electronics cleaning, metals cleaning, and precision cleaning end-uses.

EPA's review of certain substitutes listed in this document is pending for other uses. Listing in the end-uses and applications in this document does not prejudge EPA's listings of these substitutes for other uses. For many of the substitutes being added through this document to the acceptable lists for specific end-uses, there are other listed substitutes for the end-use whose overall risk is comparable except that they have a lower risk in one SNAP criterion, for example toxicity or atmospheric effects. However, for the end-uses addressed in this action, those alternatives have not yet proven feasible in those specific end-uses. If alternatives that pose significantly less overall risk—either those currently listed or new alternatives added to the list—are demonstrated in the future as feasible for one or more of the relevant end-uses, EPA may evaluate whether to change the listing status of the substitutes addressed in this document.

For copies of the full list of acceptable substitutes for ozone depleting substances (ODS) in all industrial sectors, visit the SNAP portion of EPA's Ozone Layer Protection Web site at *www.epa.gov/snap/substitutes-sector.* Substitutes listed as unacceptable; acceptable, subject to narrowed use limits; or acceptable, subject to use conditions are also listed in the appendices to 40 CFR part 82, subpart G.

The sections below discuss each substitute listing in detail. Appendix A contains tables summarizing today's listing decisions for these new substitutes. The statements in the ''Further Information'' column in the tables provide additional information but are not legally binding under section 612 of the Clean Air Act (CAA). In addition, the ''Further Information'' column may not include a comprehensive list of other legal obligations you may need to meet when using the substitute. Although you are not required to follow recommendations in the ''Further Information'' column of the table to use a substitute consistent with section 612 of the CAA, some of these statements may refer to obligations that are enforceable or binding under federal or state programs other than the SNAP program. In many instances, the information simply refers to standard operating practices in existing industry standards and/or building codes. When using these substitutes, EPA strongly encourages you to apply the information in this column. Many of these recommendations, if adopted, would not require significant changes to existing operating practices.

You can find submissions to EPA for the substitutes listed in this document, as well as other materials supporting the decisions in this action, in Docket EPA–HQ–OAR–2003–0118 at *www.regulations.gov.*

A. Refrigeration and Air Conditioning

1. HFC-134a

EPA's decision: EPA finds HFC-134a acceptable as a substitute for use in:

• Residential and light commercial air conditioning and heat pumps (retrofit equipment only)

HFC-134a is also known as R-134a, or 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2). EPA has previously listed HFC-134a as acceptable for use in residential and light commercial air conditioning and heat pumps in new equipment, as well as in a number of other end-uses and sectors.

You may find the redacted submission in Docket EPA–HQ–OAR–2003–0118 at *www.regulations.gov* under the name, ''Supporting Documentation for Notice 33 Listing of HFC-134a in Residential and Light Commercial Air Conditioning and Heat Pumps. SNAP Submission Received February 3, 2014.'' EPA performed an assessment to examine the health and environmental risks of this substitute. This assessment is available in Docket EPA–HQ–OAR–2003–0118 under the following name:

• ''Risk Screen on Substitutes in Residential and Light Commercial Air Conditioning and Heat Pumps Substitute: HFC-134a''

Environmental information: HFC-134a has an ozone depletion potential (ODP) of approximately zero.[1] Its global warming potential (GWP) is 1,430, and it has an atmospheric lifetime [2] of approximately 14 years.[3] HFC-134a is excluded from the definition of volatile organic compounds (VOC) under CAA regulations (see 40 CFR 51.100(s)) addressing the development of state implementation plans (SIPs) to attain and maintain the National Ambient Air Quality Standards (NAAQS). Knowingly venting or releasing this refrigerant is limited by the venting prohibition under section 608(c)(2) of the CAA, codified at 40 CFR 82.154(a)(1).

Flammability information: HFC-134a is not flammable.

Toxicity and exposure data: Potential health effects of exposure to this substitute include drowsiness or dizziness. The substitute may also irritate the skin or eyes or cause frostbite. At sufficiently high concentrations, the substitute may cause irregular heartbeat when inhaled. The substitute could cause asphyxiation if air is displaced by vapors in a confined space. These potential health effects are common to many refrigerants.

The American Industrial Hygiene Association (AIHA) has established a workplace environmental exposure limit (WEEL) of 1,000 ppm as an eight-hour time-weighted average (8-hr TWA) for HFC-134a. EPA anticipates that users will be able to meet the AIHA WEEL and address potential health risks by following requirements and recommendations in the manufacturer's Safety Data Sheet (SDS), in the American Society for Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 15, and other safety precautions common to the refrigeration and air conditioning industry.

[1] EPA assumes that compounds containing no chlorine, bromine, or iodine have an ODP of zero.

[2] We provide information on the atmospheric lifetime of individual chemicals where we have such information.

[3] Unless otherwise stated, all GWPs in this document are 100-year values from: IPCC, 2007: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., Qin, D., Manning, M., Chen, Z., Marquis, M., Averyt, K.B., Tignor M., and Miller, H.L. (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. This document is accessible at *www.ipcc.ch/publications_and_data/ar4/wg1/en/contents.html.*

Comparison to other substitutes in this end-use: HFC-134a has an ODP of zero, comparable [4] to the other listed substitutes in this end-use, all with an ODP of zero.

HFC-134a has a GWP of 1,430. All other substitutes listed as acceptable for residential and light commercial air conditioning and heat pumps in retrofit equipment have higher GWPs than HFC-134a, such as R-407C, R-438A, and R-507A with GWPs ranging from 1,770 to 3,990.

Flammability and toxicity risks are comparable to or lower than flammability and toxicity risks of other available substitutes in the same end-use. Toxicity risks can be minimized by use consistent with the AIHA WEELs, ASHRAE 15 and other industry standards, recommendations in the manufacturer's SDS, and other safety precautions common in the refrigeration and air conditioning industry.

EPA finds HFC-134a acceptable in the end-use listed above, because it does not pose greater overall environmental and human health risk than other available substitutes in the same end-use.

2. HFE-7300 (1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy-4-(trifluoromethyl)pentane)

EPA's decision: EPA finds HFE-7300 acceptable as a substitute for use in:

- Non-mechanical heat transfer systems (new and retrofit equipment) [5]

HFE-7300 is also known as 1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy-4-(trifluoromethyl)pentane (CAS Reg. No. 132182–92–4) and goes by the trade name of 3M™ Novec™ 7300 Engineered Fluid.

You may find the redacted submission in Docket EPA–HQ–OAR–2003–0118 at *www.regulations.gov* under the name, ''Supporting Documentation for Notice 33 Listing of HFE-7300 in Solvent Cleaning and Non-Mechanical Heat Transfer Systems. SNAP Submission Received October 13, 2016.'' EPA performed an assessment to examine the health and environmental risks of this substitute. This assessment is available in Docket EPA–HQ–OAR–2003–0118 under the following name:

- ''Risk Screen on Substitutes in Heat Transfer: HFE-7300''

Environmental information: HFE-7300 has an ODP of zero. The GWP of HFE-7300 is approximately 310, and it has an atmospheric lifetime of approximately 3.8 years.[6] HFE-7300 is excluded from the definition of VOC under CAA regulations (see 40 CFR 51.100(s)) addressing the development of SIPs to attain and maintain the NAAQS. This substitute is subject to a Toxic Substance Control Act (TSCA) section 5(a)(2) Significant New Use Rule (SNUR) (40 CFR 721.10061) which requires notification to EPA before release of manufacturing, process, or use streams containing the substitute into the waters of the United States. Knowingly venting or releasing this refrigerant is limited by the venting prohibition under section 608(c)(2) of the CAA, codified at 40 CFR 82.154(a)(1).

Flammability information: HFE-7300 is not flammable.

Toxicity and exposure data: Potential health effects of exposure to this substitute include eye irritation, skin irritation, and respiratory tract irritation. Ingestion of HFE-7300 may also be harmful. The substitute could cause asphyxiation if air is displaced by vapors in a confined space. These potential health effects are common to many refrigerants.

EPA anticipates that HFE-7300 will be used in a manner consistent with the recommendations specified in the SDS. The manufacturer recommends an acceptable exposure limit (AEL) of 100 ppm on an 8-hour TWA. EPA anticipates that users will be able to meet the manufacturer's AEL and address potential health risks by following requirements and recommendations in the manufacturer's SDS and in any other safety precautions common to the refrigeration and air conditioning industry.

Comparison to other substitutes in this end-use: HFE-7300 has an ODP of zero, comparable [7] to or lower than other acceptable substitutes in this same end-use, with ODPs ranging from zero to 0.00034.[8]

For non-mechanical heat transfer systems, HFE-7300's GWP of 310 is lower than or comparable to that of acceptable substitutes, such as HFE-7100, HFC-245fa, and HFC-236fa with GWPs ranging from about 300 to 9,810. HFE-7300's GWP is higher than the GWPs of other acceptable substitutes in non-mechanical heat transfer systems, including C7 Fluoroketone, HFO-1234ze(E), and HFE-7200 with GWPs ranging from one to approximately 60.

Flammability and toxicity risks are comparable to or lower than flammability and toxicity risks of other available substitutes in the same end-use. Toxicity risks can be minimized by use consistent with the manufacturer's AEL, recommendations in the manufacturer's SDS, and other safety precautions common in the refrigeration and air conditioning industry.

EPA finds HFE-7300 acceptable in the end-use listed above because it does not pose greater overall environmental and human health risk than other available substitutes in the same end-use.

3. R-407H

EPA's decision: EPA finds R-407H acceptable as a substitute for use in:

- Retail food refrigeration—remote condensing units (new and retrofit equipment)

R-407H, marketed under the trade name D407, is a weighted blend of 52.5 percent HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); 32.5 percent HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); and 15 percent HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354-33-6).

You may find the redacted submission in Docket EPA-HQ-OAR-2003-0118 at *www.regulations.gov* under the name, ''Supporting Documentation for Notice 33 Listing of R-407H in Retail Food Refrigeration (Remote Condensing Units). SNAP Submission Received January 26, 2017.'' EPA has performed an assessment to examine the health and environmental risks of this substitute. This assessment is available in Docket EPA–HQ–OAR–2003–0118 under the following name:

- ''Risk Screen on Substitutes for Use in Retail Food Refrigeration Substitute: R-407H''

Environmental information: R-407H has an ODP of zero. Its components, HFC-134a, HFC-32, and HFC-125, have GWPs of 1,430, 675, and 3,500, respectively. If these values are weighted by mass percentage, then R-407H has a GWP of about 1,500. The components of R-407H are excluded from the definition of VOC under CAA regulations (see 40 CFR 51.100(s)) addressing the development of SIPs to attain and maintain the NAAQS. Knowingly venting or releasing this refrigerant blend is limited by the venting prohibition under section 608(c)(2) of the CAA, codified at 40 CFR 82.154(a)(1).

[4] This is in contrast to the historically used ODS CFC-12, R-502, and HCFC-22 with ODPs ranging from 0.055 to 1.0.

[5] Acceptable substitutes for organic Rankine cycle have typically been included through listings in the non-mechanical heat transfer end-use. EPA may review organic Rankine cycle applications separately in the future.

[6] 3M (2016) as per IPCC 4th Assessment Report.

[7] This is in contrast to the historically used ODS CFC-11, CFC-12, CFC-113, CFC-114, and HCFC-22 with ODPs ranging from 0.055 to 1.0.

[8] Unless otherwise stated, all ODPs in this document are from EPA's regulations at appendix A to subpart A of 40 CFR part 82.

Flammability information: R-407H, as formulated and even considering the worst-case of fractionation for flammability, is not flammable.

Toxicity and exposure data: Potential health effects of exposure to this substitute include drowsiness or dizziness. The substitute may also irritate the skin or eyes or cause frostbite. At sufficiently high concentrations, the substitute may cause irregular heartbeat. The substitute could cause asphyxiation if air is displaced by vapors in a confined space. These potential health effects are common to many refrigerants.

EPA anticipates that R-407H will be used in a manner consistent with the recommendations specified in the SDS. The AIHA has established WEELs of 1,000 ppm as an 8-hr TWA for HFC-134a, HFC-32, and HFC-125, the components of R-407H. The manufacturer recommends an AEL of 1,000 ppm on an 8-hour TWA for the blend. EPA anticipates that users will be able to meet the manufacturer's AEL and the AIHA WEELs and to address potential health risks by following requirements and recommendations in the manufacturer's SDS, in ASHRAE 15, and other safety precautions common to the refrigeration and air conditioning industry.

Comparison to other substitutes in this end-use: R-407H has an ODP of zero, comparable [9] to or lower than the other listed substitutes in this end-use, with ODPs ranging from zero to 0.057.

For retail food refrigeration—remote condensing units, R-407H's GWP of about 1,500 is lower than that of acceptable substitutes, such as R-407A, R-407C, R-407F, R-410B, and R-421A, with GWPs ranging from 1,770 to 2,630. R-407H's GWP is higher than the GWPs of other acceptable substitutes in retail food refrigeration—remote condensing units, including CO_2, R-450A, and R-513A, with GWPs ranging from one to about 630.

Flammability and toxicity risks are comparable to or lower than flammability and toxicity risks of other available substitutes in the same end-use. Toxicity risks can be minimized by use consistent with the AIHA WEELs, manufacturer's AEL, ASHRAE 15, and other industry standards, recommendations in the manufacturer's SDS, and other safety precautions common in the refrigeration and air conditioning industry.

EPA finds R-407H acceptable in the end-use listed above because it does not pose greater overall environmental and human health risk than other available substitutes in the same end-use.

4. R-442A

EPA's decision: EPA finds R-442A acceptable as a substitute for use in:

- Retail food refrigeration—remote condensing units (new and retrofit equipment)

R-442A, marketed under the trade name RS-50, is a weighted blend of 31 percent HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); 31 percent HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); 30 percent HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); five percent HFC-227ea, which is also known as 1,1,1,2,3,3,3-heptafluoropropane (CAS Reg. No. 431–89–0); and three percent HFC-152a, which is also known as 1,1-difluoroethane (CAS Reg. No. 75–37–6).

EPA previously listed R-442A as an acceptable refrigerant in a number of other refrigeration and air conditioning end-uses (May 17, 2013; 78 FR 29034).

You may find the redacted submission in Docket EPA–HQ–OAR–2003–0118 at *www.regulations.gov* under the name, ''Supporting Documentation for Notice 33 Listing of R-442A (RS 50) in Retail Food Refrigeration (Remote Condensing Units). SNAP Submission Received July 26, 2011.'' EPA has performed an assessment to examine the health and environmental risks of this substitute. This assessment is available in Docket EPA–HQ–OAR–2003–0118 under the following name:

- ''Risk Screen on Substitutes for Use in Retail Food Refrigeration Substitute: R-442A''

Environmental information: R-442A has an ODP of zero. Its components, HFC-32, HFC-125, HFC-134a, HFC-227ea, and HFC-152a, have GWPs of 675; 3,500; 1,430; 3,220; and 124, respectively. If these values are weighted by mass percentage, then R-442A has a GWP of about 1,890. The components of R-442A are excluded from the definition of VOC under CAA regulations (see 40 CFR 51.100(s)) addressing the development of SIPs to attain and maintain the NAAQS. Knowingly venting or releasing this refrigerant blend is limited by the venting prohibition under section 608(c)(2) of the CAA, codified at 40 CFR 82.154(a)(1).

Flammability information: R-442A, as formulated and even considering the worst-case of fractionation for flammability, is not flammable.

Toxicity and exposure data: Potential health effects of exposure to this substitute include drowsiness or dizziness. The substitute may also irritate the skin or eyes or cause frostbite. At sufficiently high concentrations, the substitute may cause irregular heartbeat. The substitute could cause asphyxiation if air is displaced by vapors in a confined space. These potential health effects are common to many refrigerants.

The AIHA has established WEELs of 1,000 ppm as an 8-hr TWA for HFC-32, HFC-125, HFC-134a, HFC-227ea, and HFC-152a, the components of R-442A. The manufacturer of R-442A recommends an AEL of 1,000 ppm on an 8-hour TWA for the blend. EPA anticipates that users will be able to meet the AIHA WEELs and address potential health risks by following requirements and recommendations in the manufacturer's SDS, in ASHRAE 15, and other safety precautions common to the refrigeration and air conditioning industry.

Comparison to other substitutes in this end-use: R-442A has an ODP of zero, comparable [10] to or lower than the other listed substitutes in this end-use, with ODPs ranging from zero to 0.057.

For retail food refrigeration—remote condensing units, R-442A's GWP of about 1,890 is lower than or comparable to that of acceptable substitutes, such as R-407A, R-407F, R-410B, and R-421A with GWPs ranging from 1,820 to 2,630. R-442A's GWP is higher than the GWPs of other acceptable substitutes in retail food refrigeration—remote condensing units, including CO_2 with a GWP of one and HFC-134a, R-407C, R-448A, R-449A, R-449B, R-450A, and R-513A with GWPs of about 600 to 1,770.

Flammability and toxicity risks are comparable to or lower than flammability and toxicity risks of other available substitutes in the same end-use. Toxicity risks can be minimized by use consistent with the AIHA WEELs, ASHRAE 15, and other industry standards, recommendations in the manufacturer's SDS, and other safety precautions common in the refrigeration and air conditioning industry.

EPA finds R-442A acceptable in the end-use listed above because it does not pose greater overall environmental and human health risk than other available substitutes in the same end-use.

5. R-448A

EPA's decision: EPA finds R-448A acceptable as a substitute for use in:

[9] This is in contrast to the historically used ODS CFC-12, HCFC-22, and R-502, with ODPs ranging from 0.055 to 1.0.

[10] This is in contrast to the historically used ODS CFC-12, HCFC-22, and R-502, with ODPs ranging from 0.055 to 1.0.

- Cold storage warehouses (new and retrofit equipment)
- Industrial process refrigeration (new and retrofit equipment)

R-448A, marketed under the trade name Solstice® N-40, is a weighted blend of 26 percent HFC-32, which is also known as difluoromethane (CAS Reg. No. 75-10-5); 26 percent HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); 21 percent HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); 20 percent HFO-1234yf, which is also known as 2,3,3,3-tetrafluoroprop-1-ene (CAS Reg. No 754–12–1); and seven percent HFO-1234ze(E), which is also known as *trans*-1,3,3,3-tetrafluoroprop-1-ene (CAS Reg. No. 29118-24-9).

You may find the redacted submission in Docket EPA–HQ–OAR–2003–0118 at *www.regulations.gov* under the name, ''Supporting Documentation for Notice 33 Listing of R-448A (N-40) in Industrial Process Refrigeration and Cold Storage Warehouses. SNAP Submission Received May 29, 2014.'' EPA performed assessments to examine the health and environmental risks of this substitute. These assessments are available in Docket EPA–HQ–OAR–2003–0118 under the following names:

- ''Risk Screen on Substitutes in Cold Storage Warehouses Substitute: R-448A (Solstice® N-40)''
- ''Risk Screen on Substitutes in Industrial Process Refrigeration Substitute: R-448A (Solstice® N-40)''

EPA previously listed R-448A as an acceptable refrigerant in a number of other refrigeration and air conditioning end-uses (*e.g.,* July 16, 2015, 80 FR 42053; October 11, 2016, 81 FR 70029).

Environmental information: R-448A has an ODP of zero. Its components, HFC-32, HFC-125, HFC-134a, HFO-1234yf, and HFO-1234ze(E) have GWPs of 675; 3,500; 1,430; one to four;[11] [12] and one to six;[13] respectively. If these values are weighted by mass percentage, then R-448A has a GWP of about 1,390. The components of R-448A are excluded from the definition of VOC under CAA regulations (see 40 CFR 51.100(s)) addressing the development of SIPs to attain and maintain the NAAQS. Knowingly venting or releasing this refrigerant blend is limited by the venting prohibition under section 608(c)(2) of the CAA, codified at 40 CFR 82.154(a)(1).

Flammability information: R-448A, as formulated and even considering the worst-case of fractionation for flammability, is not flammable.

Toxicity and exposure data: Potential health effects of exposure to this substitute include drowsiness or dizziness. The substitute may also irritate the skin or eyes or cause frostbite. At sufficiently high concentrations, the substitute may cause irregular heartbeat. The substitute could cause asphyxiation if air is displaced by vapors in a confined space. These potential health effects are common to many refrigerants.

The AIHA has established WEELs of 1,000 ppm as an 8-hr TWA for HFC-32, HFC-125, and HFC-134a; 500 ppm for HFO-1234yf; and 800 ppm for HFO-1234ze(E), the components of R-448A. The manufacturer of R-448A recommends an AEL of 890 ppm on an 8-hour TWA for the blend. EPA anticipates that users will be able to meet the AIHA WEELs and manufacturer's AEL and address potential health risks by following requirements and recommendations in the manufacturer's SDS, in ASHRAE 15, and other safety precautions common to the refrigeration and air conditioning industry.

Comparison to other substitutes in these end-uses: R-448A has an ODP of zero, comparable[14] to or lower than other listed substitutes in these end-uses, with ODPs ranging from zero to 0.057.

For cold storage warehouses, R-448A's GWP of 1,390 is lower than or comparable to that of acceptable substitutes, such as HFC-134a, R-407C, and R-407F, with GWPs ranging from 1,430 to 1,820. R-448A's GWP is higher than the GWPs of other acceptable substitutes for cold storage warehouses, including ammonia absorption, desiccant cooling, evaporative cooling, R-450A, and R-513A with GWPs ranging from zero to about 630.

For industrial process refrigeration, R-448A's GWP of 1,390 is lower than or comparable to that of acceptable substitutes, such as HFC-134a, R-404A, R-407C, and HFC-23 with GWPs ranging from 1,430 to 14,800. R-448A's GWP is higher than the GWPs of other acceptable substitutes for industrial process refrigeration, including ammonia absorption, ammonia vapor compression, Sterling cycle, CO_2, propane, R-450A, and R-513A with GWPs ranging from zero to about 630.

Flammability and toxicity risks are comparable to or lower than flammability and toxicity risks of other available substitutes in the same end-uses. Toxicity risks can be minimized by use consistent with the AIHA WEELs, ASHRAE 15 and other industry standards, recommendations in the manufacturer's SDS, and other safety precautions common in the refrigeration and air conditioning industry.

EPA finds R-448A acceptable in the end-uses listed above because it does not pose greater overall environmental and human health risk than other available substitutes in the same end-uses.

6. R-449A

EPA's decision: EPA finds R-449A acceptable as a substitute for use in:

- Cold storage warehouses (new and retrofit equipment)
- Industrial process refrigeration (new and retrofit equipment)

R-449A, marketed under the trade name Opteon® XP 40, is a weighted blend of 24.3 percent HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); 24.7 percent HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); 25.7 percent HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); and 25.3 percent HFO-1234yf, which is also known as 2,3,3,3-tetrafluoroprop-1-ene (CAS Reg. No. 754–12–1).

You may find the redacted submission in Docket EPA–HQ–OAR–2003–0118 at *www.regulations.gov* under the name, ''Supporting Documentation for Notice 33 Listing of R-449A (XP40) in Industrial Process Refrigeration and Cold Storage Warehouses. SNAP Submission Received August 26, 2014.'' EPA performed assessments to examine the health and environmental risks of this substitute. These assessments are available in Docket EPA–HQ–OAR–2003–0118 under the following names:

- ''Risk Screen on Substitutes in Cold Storage Warehouses Substitute: R-449A (Opteon® XP40)''
- ''Risk Screen on Substitutes in Industrial Process Refrigeration Substitute: R-449A (Opteon® XP40)''

EPA previously listed R-449A as an acceptable refrigerant in a number of other refrigeration and air conditioning end-uses (*e.g.,* July 16, 2015, 80 FR 42053; October 11, 2016, 81 FR 70029).

Environmental information: R-449A has an ODP of zero. Its components, HFC-32, HFC-125, HFC-134a, and HFO-

[11] Hodnebrog *et al.,* 2013. *Op. cit.*

[12] Nielsen, O.J., Javadi, M.S., Sulbaek Andersen, M.P., Hurley, M.D., Wallington, T.J., Singh, R. Atmospheric chemistry of $CF_3CF{=}CH_2$: Kinetics and mechanisms of gas-phase reactions with Cl atoms, OH radicals, and O_3. *Chemical Physics Letters* 439, 18–22, 2007.

[13] Hodnebrog *et al.,* 2013 and Javadi *et al.,* 2008. *Op. cit.*

[14] This is in contrast to the historically used ODS CFC-12, R-502, and HCFC-22 with ODPs ranging from 0.055 to 1.0.

1234yf, have GWPs of 675; 3,500; 1,430; and one to four,[15] respectively. If these values are weighted by mass percentage, then R-449A has a GWP of about 1,400. The components of R-449A are excluded from the definition of VOC under CAA regulations (see 40 CFR 51.100(s)) addressing the development of SIPs to attain and maintain the NAAQS. Knowingly venting or releasing this refrigerant blend is limited by the venting prohibition under section 608(c)(2) of the CAA, codified at 40 CFR 82.154(a)(1).

Flammability information: R-449A, as formulated and even considering the worst-case of fractionation for flammability, is not flammable.

Toxicity and exposure data: Potential health effects of exposure to this substitute include drowsiness or dizziness. The substitute may also irritate the skin or eyes or cause frostbite. At sufficiently high concentrations, the substitute may cause irregular heartbeat. The substitute could cause asphyxiation if air is displaced by vapors in a confined space. These potential health effects are common to many refrigerants.

The AIHA has established WEELs of 1,000 ppm as an 8-hr TWA for HFC-32, HFC-125, and HFC-134a and 500 ppm for HFO-1234yf, the components of R-449A. The manufacturer of R-449A recommends an AEL of 830 ppm on an 8-hour TWA for the blend. EPA anticipates that users will be able to meet each of the AIHA WEELs and the manufacturer's AEL and address potential health risks by following requirements and recommendations in the manufacturer's SDS, in ASHRAE 15, and other safety precautions common to the refrigeration and air conditioning industry.

Comparison to other substitutes in these end-uses: R-449A has an ODP of zero, comparable [16] to or lower than the other listed substitutes in this end-use, with ODPs ranging from zero to 0.057.

For cold storage warehouses, R-449A's GWP of 1,400 is lower than or comparable to that of acceptable substitutes, such as HFC-134a, R-407C, and R-407F with GWPs ranging from 1,430 to 1,820. R-449A's GWP is higher than the GWPs of other acceptable substitutes for cold storage warehouses, including ammonia absorption, desiccant cooling, evaporative cooling, R-450A, and R-513A with GWPs ranging from zero to about 630.

For industrial process refrigeration, R-449A's GWP of 1,400 is lower than or comparable to that of acceptable substitutes, such as HFC-134a, R-404A, R-407C, and HFC-23 with GWPs ranging from 1,430 to 14,800. R-449A's GWP is higher than the GWPs of other acceptable substitutes for industrial process refrigeration including ammonia absorption, ammonia vapor compression, Sterling cycle, CO_2, propane, R-450A, and R-513A with GWPs ranging from zero to about 630.

Flammability and toxicity risks are comparable to or lower than flammability and toxicity risks of other available substitutes in the same end-uses. Toxicity risks can be minimized by use consistent with the AIHA WEELs, ASHRAE 15 and other industry standards, recommendations in the manufacturer's SDS, and other safety precautions common in the refrigeration and air conditioning industry.

EPA finds R-449A acceptable in the end-uses listed above because it does not pose greater overall environmental and human health risk than other available substitutes in the same end-uses.

7. R-449B

EPA's decision: EPA finds R-449B acceptable as a substitute for use in:

- Cold storage warehouses (new and retrofit equipment)
- Industrial process refrigeration (new and retrofit equipment)

R-449B, marketed under the trade name Forane® 449B, is a weighted blend of 25.2 percent HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); 24.3 percent HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); 27.3 percent HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); and 23.2 percent HFO-1234yf, which is also known as 2,3,3,3-tetrafluoroprop-1-ene (CAS Reg. No. 754–12–1).

You may find the redacted submission in Docket EPA–HQ–OAR–2003–0118 at *www.regulations.gov* under the name, ''Supporting Documentation for Notice 33 Listing of R-449B in Industrial Process Refrigeration and Cold Storage Warehouses. SNAP Submission Received October 2, 2015.'' EPA performed assessments to examine the health and environmental risks of this substitute. These assessments are available in Docket EPA–HQ–OAR–2003–0118 under the following names:

- ''Risk Screen on Substitutes in Cold Storage Warehouses Substitute: R-449B (Forane® 449B)''
- ''Risk Screen on Substitutes in Industrial Process Refrigeration Substitute: R-449B (Forane® 449B)''

EPA previously listed R-449B as an acceptable refrigerant in a number of other refrigeration and air conditioning end-uses (*i.e.,* October 11, 2016, 81 FR 70029).

Environmental information: R-449B has an ODP of zero. Its components, HFC-32, HFC-125, HFC-134a, and HFO-1234yf, have GWPs of 675; 3,500; 1,430; and one to four,[17] respectively. If these values are weighted by mass percentage, then R-449B has a GWP of about 1,410. The components of R-449B are excluded from the definition of VOC under CAA regulations (see 40 CFR 51.100(s)) addressing the development of SIPs to attain and maintain the NAAQS. Knowingly venting or releasing this refrigerant blend is limited by the venting prohibition under section 608(c)(2) of the CAA, codified at 40 CFR 82.154(a)(1).

Flammability information: R-449B, as formulated and even considering the worst-case of fractionation for flammability, is not flammable.

Toxicity and exposure data: Potential health effects of exposure to this substitute include drowsiness or dizziness. The substitute may also irritate the skin or eyes or cause frostbite. At sufficiently high concentrations, the substitute may cause irregular heartbeat. The substitute could cause asphyxiation if air is displaced by vapors in a confined space. These potential health effects are common to many refrigerants.

The AIHA has established WEELs of 1,000 ppm as an 8-hr TWA for HFC-32, HFC-125, and HFC-134a and 500 ppm for HFO-1234yf, the components of R-449B. The manufacturer of R-449B recommends an AEL of 850 ppm on an 8-hour TWA for the blend. EPA anticipates that users will be able to meet each of the AIHA WEELs and the manufacturer's AEL and address potential health risks by following requirements and recommendations in the manufacturer's SDS, in ASHRAE 15, and other safety precautions common to the refrigeration and air conditioning industry.

Comparison to other substitutes in these end-uses: R-449B has an ODP of zero, comparable [18] to or lower than the other listed substitutes in this end-use, with ODPs ranging from zero to 0.057.

For cold storage warehouses, R-449B's GWP of 1,410 is lower than or

[15] Hodnebrog *et al.,* 2013 and Nielsen *et al.,* 2007. *Op. cit.*

[16] This is in contrast to the historically used ODS CFC-12, R-502, and HCFC-22 with ODPs ranging from 0.055 to 1.0.

[17] Hodnebrog *et al.,* 2013 and Nielsen *et al.,* 2007. *Op. cit.*

[18] This is in contrast to the historically used ODS CFC-12, R-502, and HCFC-22 with ODPs ranging from 0.055 to 1.0.

comparable to that of acceptable substitutes, such as HFC-134a, R-407C, and R-407F with GWPs ranging from 1,430 to 1,820. R-449B's GWP is higher than the GWPs of other acceptable substitutes for cold storage warehouses including ammonia absorption, desiccant cooling, evaporative cooling, R-450A, and R-513A with GWPs ranging from zero to about 630.

For industrial process refrigeration, many substitutes listed as acceptable have comparable or higher GWPs than R-449B's GWP of about 1,410, such as HFC-134a, R-404A, R-407C, and HFC-23 with GWPs ranging from 1,430 to 14,800; other substitutes listed as acceptable substitutes for industrial process refrigeration have a lower GWP including ammonia absorption, ammonia vapor compression, Sterling cycle, CO_2, propane, R-450A, and R-513A with GWPs ranging from zero to about 630.

Flammability and toxicity risks are comparable to or lower than flammability and toxicity risks of other available substitutes in the same end-uses. Toxicity risks can be minimized by use consistent with the AIHA WEELs, ASHRAE 15 and other industry standards, recommendations in the manufacturer's SDS, and other safety precautions common in the refrigeration and air conditioning industry.

EPA finds R-449B acceptable in the end-uses listed above because it does not pose greater overall environmental and human health risk than other available substitutes in the same end-uses.

8. R-452A

EPA's decision: EPA finds R-452A acceptable as a substitute for use in:

- Refrigerated transport—refrigerated trucks and trailers [19] (new and retrofit equipment)
- Retail food refrigeration—remote condensing units (new and retrofit equipment)

R-452A, marketed under the trade name Opteon® XP 44, is a weighted blend of 11 percent HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); 59 percent HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); and 30 percent HFO-1234yf, which is also known as 2,3,3,3-tetrafluoro-prop-1-ene (CAS Reg. No. 754–12–1).

You may find the redacted submission in Docket EPA–HQ–OAR–2003–0118 at *www.regulations.gov* under the name, ''Supporting Documentation for Notice 33 Listing of R-452A (XP44) in Refrigerated Transport (Refrigerated Trucks and Trailers) and Retail Food Refrigeration (Remote Condensing Units). SNAP Submission Received August 8, 2014.'' EPA has performed assessments to examine the health and environmental risks of this substitute. These assessments are available in Docket EPA–HQ–OAR–2003–0118 under the following names:

- ''Risk Screen on Substitutes for Use in Refrigerated Transport Substitute: R-452A''
- ''Risk Screen on Substitutes for Use in Retail Food Refrigeration Substitute: R-452A''

Environmental information: R-452A has an ODP of zero. Its components, HFC-32, HFC-125, and HFO-1234yf, have GWPs of 675; 3,500; and one to four, respectively. If these values are weighted by mass percentage, then R-452A has a GWP of about 2,140. The components of R-452A are excluded from the definition of VOC under CAA regulations (see 40 CFR 51.100(s)) addressing the development of SIPs to attain and maintain the NAAQS. Knowingly venting or releasing this refrigerant blend is limited by the venting prohibition under section 608(c)(2) of the CAA, codified at 40 CFR 82.154(a)(1).

Flammability information: R-452A, as formulated and even considering the worst-case of fractionation for flammability, is not flammable.

Toxicity and exposure data: Potential health effects of this substitute include drowsiness or dizziness. The substitute may also irritate the skin or eyes or cause frostbite. At sufficiently high concentrations, the substitute may cause irregular heartbeat. The substitute could cause asphyxiation if air is displaced by vapors in a confined space. These potential health effects are common to many refrigerants.

The AIHA has established WEELs for the components of R-452A of 1,000 ppm as an 8-hr TWA for HFC-32 and HFC-125, and of 500 ppm as an 8-hr TWA for HFO-1234yf. The manufacturer of R-452A recommends an AEL of 786 ppm on an 8-hour TWA for the blend. EPA anticipates that users will be able to meet each of the AIHA WEELs and address potential health risks by following requirements and recommendations in the manufacturer's SDS, in ASHRAE 15, and other safety precautions common to the refrigeration and air conditioning industry.

Comparison to other substitutes in these end-uses: R-452A has an ODP of zero, comparable [20] to or lower than the other listed substitutes in these end-uses, with ODPs ranging from zero to 0.057.

For refrigerated transport—refrigerated trucks and trailers, R-452A's GWP of about 2,140 is lower than or comparable to that of acceptable substitutes, such as R-404A, R-507A, and a number of HFC refrigerant blends (with GWPs ranging from approximately 2,230 to 3,990). R-452A's GWP is higher than the GWPs of other acceptable substitutes for refrigerated transport, including CO_2, direct nitrogen expansion, HFC-134a, R-407A, R-407C, R-407F, R-410A, R-448A, R-449A, R-450A, R-513A, and Stirling cycle, with GWPs ranging from zero to about 2,110.

For retail food refrigeration—remote condensing units, R-452A's GWP of about 2,140 is lower than or comparable to that of acceptable substitutes, such as R-410B and R-421A, with GWPs ranging from 2,230 to 2,630. R-452A's GWP is higher than the GWPs of other acceptable substitutes in retail food refrigeration—remote condensing units, including CO_2 with a GWP of one, and HFC-134a and a number of HFC blends and HFC/HFO blends with GWPs of about 600 to 2,110.

Flammability and toxicity risks are comparable to or lower than flammability and toxicity risks of other available substitutes in the same end-uses. Toxicity risks can be minimized by use consistent with the AIHA WEELs, ASHRAE 15 and other industry standards, recommendations in the manufacturer's SDS, and other safety precautions common in the refrigeration and air conditioning industry.

EPA finds R-452A acceptable in the end-uses listed above because it does not pose greater overall environmental and human health risk than other available substitutes in the same end-uses.

9. R-452C

EPA's decision: EPA finds R-452C acceptable as a substitute for use in:

- Refrigerated transport—refrigerated trucks and trailers (new and retrofit equipment)

[19] This end-use category covers a subset of on-road vehicles, *i.e.,* refrigerated trucks and trailers with a separate refrigeration unit with the condenser typically located either in the main engine compartment or at the front of a refrigerated trailer. It does not include refrigerated vans or other vehicles where a single system also supplies passenger comfort cooling, refrigerated intermodal shipping containers (*e.g.,* containers designed to be moved between ships, trucks, or other modes of transportation for uninterrupted storage), railway refrigeration, or ship holds.

[20] This is in contrast to the historically used ODS CFC-12, R-502, and HCFC-22 with ODPs ranging from 0.055 to 1.0.

- Retail food refrigeration—remote condensing units (new and retrofit equipment)

R-452C, marketed under the trade name Forane® 452C, is a weighted blend of 12.5 percent HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); 61 percent HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); and 26.5 percent HFO-1234yf, which is also known as 2,3,3,3-tetrafluoro-prop-1-ene (CAS Reg. No. 754–12–1).

You may find the redacted submission in Docket EPA–HQ–OAR–2003–0118 at *www.regulations.gov* under the name, ''Supporting Documentation for Notice 33 Listing of R-452C in Refrigerated Transport (Refrigerated Trucks and Trailers) and Retail Food Refrigeration (Remote Condensing Units). SNAP Submission Received July 8, 2016.'' EPA has performed assessments to examine the health and environmental risks of this substitute. These assessments are available in Docket EPA–HQ–OAR–2003–0118 under the following names:

- ''Risk Screen on Substitutes for Use in Refrigerated Transport Substitute: R-452C''
- ''Risk Screen on Substitutes for Use in Retail Food Refrigeration Substitute: R-452C''

Environmental information: R-452C has an ODP of zero. Its components, HFC-32, HFC-125, and HFO-1234yf, have GWPs of 675; 3,500; and one to four,[21] respectively. If these values are weighted by mass percentage, then R-452C has a GWP of about 2,220. The components of R-452C are excluded from the definition of VOC under CAA regulations (see 40 CFR 51.100(s)) addressing the development of SIPs to attain and maintain the NAAQS. Knowingly venting or releasing this refrigerant blend is limited by the venting prohibition under section 608(c)(2) of the CAA, codified at 40 CFR 82.154(a)(1).

Flammability information: R-452C, as formulated and even considering the worst-case of fractionation for flammability, is not flammable.

Toxicity and exposure data: Potential health effects of this substitute include drowsiness or dizziness. The substitute may irritate the skin or eyes or cause frostbite. At sufficiently high concentrations, the substitute may cause irregular heartbeat. The substitute could cause asphyxiation if air is displaced by vapors in a confined space. These potential health effects are common to many refrigerants.

The AIHA has established WEELs for the components of R-452C of 1,000 ppm as an 8-hr TWA for HFC-32 and HFC-125 and 500 ppm for HFO-1234yf. EPA anticipates that users will be able to meet each of the AIHA WEELs and address potential health risks by following requirements and recommendations in the manufacturer's SDS, in ASHRAE 15, and other safety precautions common to the refrigeration and air conditioning industry.

Comparison to other substitutes in these end-uses: R-452C has an ODP of zero, comparable[22] to or lower than the other listed substitutes in these end-uses, with ODPs ranging from zero to 0.057.

For refrigerated transport—refrigerated trucks and trailers, R-452C's GWP of about 2,220 is lower than or comparable to that of acceptable substitutes, such as R-404A, R-507A, and a number of HFC refrigerant blends (with GWPs ranging from approximately 2,230 to 3,990). R-452C's GWP is higher than the GWPs of other acceptable substitutes for refrigerated transport, including CO_2, direct nitrogen expansion, HFC-134a, R-407A, R-407C, R-407F, R-410A, R-448A, R-449A, R-450A, R-513A, and Stirling cycle, with GWPs ranging from zero to about 2,110.

For retail food refrigeration—remote condensing units, R-452C's GWP of about 2,220 is lower than or comparable to that of acceptable substitutes, such as R-410B and R-421A, with GWPs ranging from 2,230 to 2,630. R-452C's GWP is higher than the GWPs of other acceptable substitutes in retail food refrigeration—remote condensing units, including CO_2 with a GWP of one and HFC-134a and a number of HFC blends and HFC/HFO blends of about 600 to 2,110.

Flammability and toxicity risks are comparable to or lower than flammability and toxicity risks of other available substitutes in the same end-uses. Toxicity risks can be minimized by use consistent with the AIHA WEELs, ASHRAE 15 and other industry standards, recommendations in the manufacturer's SDS, and other safety precautions common in the refrigeration and air conditioning industry.

EPA finds R-452C acceptable in the end-uses listed above because it does not pose greater overall environmental and human health risk than other available substitutes in the same end-uses.

10. R-453A

EPA's decision: EPA finds R-453A acceptable as a substitute for use in:

- Cold storage warehouses (new and retrofit equipment)
- Industrial process refrigeration (new and retrofit equipment)
- Retail food refrigeration—remote condensing units (new and retrofit equipment)

R-453A, marketed under the trade name RS-70, is a weighted blend of 20.0 percent HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); 20.0 percent HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354-33-6); 53.8 percent HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); five percent HFC-227ea, which is also known as 1,1,1,2,3,3,3-heptafluoropropane (CAS Reg. No. 439–89–0); 0.6 percent R-600, which is also known as butane (CAS Reg. No. 75–28–5); and 0.6 percent R-601a, which is also known as isopentane (CAS Reg. 78–78–4).

You may find the redacted submission in Docket EPA–HQ–OAR–2003–0118 at *www.regulations.gov* under the name, ''Supporting Documentation for Notice 33 Listing of R-453A (RS-70) in Industrial Process Refrigeration, Cold Storage Warehouses, and Retail Food Refrigeration (Remote Condensing Units). SNAP Submission Received March 12, 2015.'' EPA performed assessments to examine the health and environmental risks of this substitute. These assessments are available in Docket EPA–HQ–OAR–2003–0118 under the following names:

- ''Risk Screen on Substitutes in Cold Storage Warehouses Substitute: R-453A (RS-70)''
- ''Risk Screen on Substitutes in Industrial Process Refrigeration Substitute: R-453A (RS-70)''
- ''Risk Screen on Substitutes for Use in Retail Food Refrigeration Substitute: R-453A''

Environmental information: R-453A has an ODP of zero. Its components, HFC-32, HFC-125, HFC-134a, HFC-227ea, butane, and isopentane, have GWPs of 675, 3,500, 1,430, 3,220, 4, and 5, respectively. If these values are weighted by mass percentage, then R-453A has a GWP of about 1,770. Except for butane and isopentane, which together make up approximately 1.2 percent of the blend, the components of R-453A are excluded from the definition of VOC under CAA regulations (see 40 CFR 51.100(s)) addressing the development of SIPs to attain and maintain the NAAQS. Knowingly

[21] Hodnebrog *et al.,* 2013 and Nielsen *et al.,* 2007. *Op. cit.*

[22] This is in contrast to the historically used ODS CFC-12, R-502, and HCFC-22 with ODPs ranging from 0.055 to 1.0.

venting or releasing this refrigerant blend is limited by the venting prohibition under section 608(c)(2) of the CAA, codified at 40 CFR 82.154(a)(1).

Flammability information: R-453A, as formulated and even considering the worst-case of fractionation for flammability, is not flammable.

Toxicity and exposure data: Potential health effects of exposure to this substitute include drowsiness or dizziness. The substitute may also irritate the skin or eyes or cause frostbite. At sufficiently high concentrations, the substitute may cause irregular heartbeat. The substitute could cause asphyxiation if air is displaced by vapors in a confined space. These potential health effects are common to many refrigerants.

For the components of R-453A, the AIHA has established WEELs of 1,000 ppm as an 8-hr TWA for HFC-32, HFC-125, HFC-134a, and HFC-227ea, and the American Conference of Governmental Industrial Hygienists (ACGIH) has established a Threshold Limit Value (TLV) of 1,000 ppm for R-600 and a TLV of 600 ppm for R-601a, both as an 8-hr TWA. The manufacturer of R-453A recommends an AEL of 1,000 ppm on an 8-hour TWA for the blend. EPA anticipates that users will be able to meet each of the AIHA WEELs, the ACGIH's TLVs, and the manufacturer's AEL and address potential health risks by following requirements and recommendations in the manufacturer's SDS, in ASHRAE 15, and other safety precautions common to the refrigeration and air conditioning industry.

Comparison to other substitutes in these end-uses: R-453A has an ODP of zero, comparable [23] to or lower than the other listed substitutes in these end-uses, with ODPs ranging from zero to 0.057.

For cold storage warehouses, R-453A's GWP of about 1,770 is lower than or comparable to that of acceptable substitutes, such as R-407C and R-407F, with GWPs ranging from 1,770 to 1,820. R-453A's GWP is higher than the GWPs of other acceptable substitutes for cold storage warehouses, including ammonia absorption, desiccant cooling, evaporative cooling, HFC-134a, R-450A, and R-513A with GWPs ranging from zero to 1,510.

For industrial process refrigeration, R-453A's GWP of about 1,770 is lower than or comparable to that of acceptable substitutes, such as R-404A, R-407C, and HFC-23 with GWPs ranging from 1,770 to 14,800. R-453A's GWP is higher than the GWPs of other acceptable substitutes for industrial process refrigeration, including ammonia absorption, ammonia vapor compression, Sterling cycle, CO_2, HFC-134a, propane, R-426A, R-450A, and R-513A with GWPs ranging from zero to about 1,510.

For retail food refrigeration—remote condensing units, R-453A's GWP of about 1,770 is lower than or comparable to that of acceptable substitutes, such as R-407A, R-407C, R-410B, and R-421A, with GWPs ranging from about 1,770 to 2,630. R-453A's GWP is higher than the GWPs of other acceptable substitutes in remote condensing units, including CO_2 with a GWP of one and HFC-134a, R-426A, R-448A, R-449A, R-449B, R-450A, and R-513A with GWPs of about 600 to 1,510.

Flammability and toxicity risks are comparable to or lower than flammability and toxicity risks of other available substitutes in the same end-uses. Toxicity risks can be minimized by use consistent with the AIHA WEELs, ASHRAE 15 and other industry standards, recommendations in the manufacturer's SDS, and other safety precautions common in the refrigeration and air conditioning industry.

EPA finds R-453A acceptable in the end-uses listed above because it does not pose greater overall environmental and human health risk than other available substitutes in the same end-uses.

11. R-458A

EPA's decision: EPA finds R-458A acceptable as a substitute for use in:

- Industrial process refrigeration (new and retrofit equipment)
- Residential and light commercial air conditioning and heat pumps (retrofit equipment only)
- Retail food refrigeration—remote condensing units (new and retrofit equipment)

R-458A, marketed under the trade name Bluon TdX 20, is a weighted blend of 20.5 percent HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); 4.0 percent HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); 61.4 percent HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); 13.5 percent HFC-227ea, which is also known as 1,1,1,2,3,3,3-heptafluoropropane (CAS Reg. No. 431–89–0); and 0.6 percent HFC-236fa, which is also known as 1,1,1,3,3,3-hexafluoropropane (CAS Reg. No. 690–39–1).

You may find the redacted submission in Docket EPA–HQ–OAR–2003–0118 at *www.regulations.gov* under the name, ''Supporting Documentation for Notice 33 Listing of R-458A (TdX20) in Industrial Process Refrigeration, Retail Food Refrigeration (Remote Condensing Units), and Residential and Light Commercial Air Conditioning and Heat Pumps. SNAP Submission Received November 7, 2014.'' EPA performed assessments to examine the health and environmental risks of this substitute. These assessments are available in Docket EPA–HQ–OAR–2003–0118 under the following names:

- ''Risk Screen on Substitutes in Industrial Process Refrigeration Substitute: R-458A (TdX 20)''
- ''Risk Screen on Substitutes in Residential and Light Commercial Air Conditioning and Heat Pumps Substitute: R-458A (TdX 20)''
- ''Risk Screen on Substitutes for Use in Retail Food Refrigeration Substitute: R-458A (TdX 20)''

Environmental information: R-458A has an ODP of zero. Its components, HFC-32, HFC-125, HFC-134a, HFC-227ea, and HFC-236fa, have GWPs of 675, 3,500, 1,430, 3,220, and 9,810, respectively. If these values are weighted by mass percentage, then R-458A has a GWP of about 1,650. The components of R-458A are excluded from the definition of VOC under CAA regulations (see 40 CFR 51.100(s)) addressing the development of SIPs to attain and maintain the NAAQS. Knowingly venting or releasing this refrigerant blend is limited by the venting prohibition under section 608(c)(2) of the CAA, codified at 40 CFR 82.154(a)(1).

Flammability information: R-458A, as formulated and even considering the worst-case of fractionation for flammability, is not flammable.

Toxicity and exposure data: Potential health effects of exposure to this substitute include drowsiness or dizziness. The substitute may also irritate the skin or eyes or cause frostbite. At sufficiently high concentrations, the substitute may cause irregular heartbeat when inhaled. The substitute could cause asphyxiation if air is displaced by vapors in a confined space. These potential health effects are common to many refrigerants.

The AIHA has established WEELs of 1,000 ppm as an 8-hr TWA for HFC-32, HFC-125, HFC-134a, HFC-227ea, and HFC-236fa, the components of R-458A. EPA anticipates that users will be able to meet the AIHA WEELs and address potential health risks by following requirements and recommendations in the manufacturer's SDS, in ASHRAE 15,

[23] This is in contrast to the historically used ODS CFC-12, R-502, and HCFC-22 with ODPs ranging from 0.055 to 1.0.

and other safety precautions common to the refrigeration and air conditioning industry.

Comparison to other substitutes in these end-uses: R-458A has an ODP of zero, comparable [24] to or lower than the other listed substitutes in these end-uses, with ODPs ranging from zero to 0.057.

For industrial process refrigeration, R-458A's GWP of about 1,650 is lower than or comparable to that of acceptable substitutes, such as R-404A, R-407C, and HFC-23, with GWPs ranging from 1,770 to 14,800. R-458A's GWP is higher than the GWPs of other acceptable substitutes for industrial process refrigeration, including ammonia absorption, ammonia vapor compression, Sterling cycle, CO_2, HFC-134a, propane, R-426A, R-450A, and R-513A, with GWPs ranging from zero to about 1,510.

For residential and light commercial air conditioning and heat pumps in retrofit equipment, R-458A's GWP of about 1,650 is lower than all other substitutes listed as acceptable, such as R-407C, R-438A, and R-507A, with GWPs ranging from 1,770 to 3,990.

For retail food refrigeration—remote condensing units, R-458A's GWP of about 1,650 is lower than that of acceptable substitutes, such as R-407A, R-407C, R-410B, and R-421A, with GWPs ranging from about 1,770 to 2,630. R-458A's GWP is higher than the GWPs of other acceptable substitutes in remote condensing units, including CO_2 with a GWP of one and HFC-134a, R-426A, R-448A, R-449A, R-449B, R-450A, and R-513A, with GWPs of about 600 to 1,510.

Flammability and toxicity risks are comparable to or lower than flammability and toxicity risks of other available substitutes in the same end-uses. Toxicity risks can be minimized by use consistent with the AIHA WEELs, ASHRAE 15, and other industry standards, recommendations in the manufacturer's SDS, and other safety precautions common in the refrigeration and air conditioning industry.

EPA finds R-458A acceptable in the end-uses listed above because it does not pose greater overall environmental and human health risk than other available substitutes in the same end-uses.

12. R-513A

EPA's decision: EPA finds R-513A acceptable as a substitute for use in:

- Residential dehumidifiers (new and retrofit equipment)

R-513A, marketed under the trade name Opteon® XP 10, is a weighted blend of 44 percent HFC-134a, which is also known as 1,1,1,2 tetrafluoroethane (CAS Reg. No. 811–97–2), and 56 percent HFO-1234yf, which is also known as 2,3,3,3-tetrafluoroprop-1-ene (CAS Reg. No. 754–12–1).

You may find the redacted submission in Docket EPA–HQ–OAR–2003–0118 at *www.regulations.gov* under the name, ''Supporting Documentation for Notice 33 Listing of R-513A (XP10) in Residential Dehumidifiers. SNAP Submission Received July 24, 2014.'' EPA performed an assessment to examine the health and environmental risks of this substitute. This assessment is available in Docket EPA–HQ–OAR–2003–0118 under the following name:

- ''Risk Screen on Substitutes for Use in Residential Dehumidifiers Substitute: R-513A''

EPA previously listed R-513A as acceptable for use as a refrigerant in several refrigeration and air conditioning end-uses (May 23, 2016, 81 FR 32241; July 16, 2015, 80 FR 42053).

Environmental information: R-513A has an ODP of zero. Its components, HFC-134a and HFO-1234yf, have GWPs of 1,430 and one to four,[25] respectively. If these values are weighted by mass percentage, then R-513A has a GWP of about 630. The components of R-513A are both excluded from the definition of VOC under CAA regulations (see 40 CFR 51.100(s)) addressing the development of SIPs to attain and maintain the NAAQS. Knowingly venting or releasing this refrigerant blend is limited by the venting prohibition under section 608(c)(2) of the CAA, codified at 40 CFR 82.154(a)(1).

Flammability information: R-513A, as formulated and even considering the worst-case of fractionation for flammability, is not flammable.

Toxicity and exposure data: Potential health effects of exposure to this substitute include drowsiness or dizziness. The substitute may also irritate the skin or eyes or cause frostbite. At sufficiently high concentrations, the substitute may cause irregular heartbeat. The substitute could cause asphyxiation if air is displaced by vapors in a confined space. These potential health effects are common to many refrigerants.

The AIHA has established WEELs of 1,000 ppm and 500 ppm as an 8-hour TWA for HFC-134a and HFO-1234yf, respectively, the components of R-513A. The manufacturer of R-513A recommends an AEL of 653 ppm on an 8-hour TWA for the blend. EPA anticipates that users will be able to meet each of the manufacturer's AEL and AIHA WEELs and address potential health risks by following requirements and recommendations in the manufacturer's SDS, in ASHRAE 15, and other safety precautions common to the refrigeration and air conditioning industry.

Comparison to other substitutes in this end-use: R-513A has an ODP of zero, comparable [26] to other listed substitutes in this end-use, with ODPs ranging from zero to 0.057.

For residential dehumidifiers, R-513A's GWP of 630 is lower than that of other acceptable substitutes, such as HFC-134a, R-404A, R-407C, R-410A, and R-507A with GWPs ranging from 1,430 to 3,990.

Flammability and toxicity risks are comparable to or lower than flammability and toxicity risks of other available substitutes in the same end-use. Toxicity risks can be minimized by use consistent with the AIHA WEELs, ASHRAE 15, and other industry standards, recommendations in the manufacturer's SDS, and other safety precautions common in the refrigeration and air conditioning industry.

EPA finds R-513A acceptable in the end-use listed above because it does not pose greater overall environmental and human health risk than other available substitutes in the same end-use.

B. Cleaning Solvents

1. HFE-7300

EPA's decision: EPA finds HFE-7300 acceptable as a substitute for use in:

- Electronics cleaning
- Metals cleaning
- Precision cleaning

HFE-7300 is also known as 1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy-4-(trifluoromethyl)pentane (CAS Reg. No. 132182–92–4) and goes by the trade name of 3M™ Novec™7300 Engineered Fluid.

You may find the redacted submission in Docket EPA–HQ–OAR–2003–0118 at *www.regulations.gov* under the name, ''Supporting Documentation for Notice 33 Listing of HFE-7300 in Solvent Cleaning and Non-Mechanical Heat Transfer Systems. SNAP Submission Received October 13, 2016.'' EPA performed an assessment to

[24] This is in contrast to the historically used ODS CFC-12, R-502, and HCFC-22 with ODPs ranging from 0.055 to 1.0.

[25] Hodnebrog *et al.,* 2013 and Nielsen *et al.,* 2007. *Op. cit.*

[26] This is in contrast to the historically used ODS CFC-12, R-502, and HCFC-22 with ODPs ranging from 0.055 to 1.0.

examine the health and environmental risks of this substitute. This assessment is available in Docket EPA–HQ–OAR–2003–0118 under the following name:

- ''Risk Screen on Substitutes in Electronics Cleaning, Metals Cleaning, and Precision Cleaning Substitute: HFE-7300.''

Environmental information: The environmental information for this substitute is set forth in the ''Environmental information'' section in listing I.A.2.

Flammability information: HFE-7300 is not flammable.

Toxicity and exposure data: The toxicity information for this substitute is set forth in the ''Toxicity and exposure data'' section in listing I.A.2. The potential health effects of HFE-7300 are common to many solvents. EPA anticipates that users will be able to meet the manufacturer's AEL of 100 ppm on an 8-hr TWA and address potential health risks by following requirements and recommendations in the manufacturer's SDS and in any other safety precautions common to the solvent cleaning industry.

Comparison to other substitutes in these end-uses: HFE-7300 has an ODP of zero, comparable [27] to or lower than the ODP of other substitutes in the same end-uses, with ODPs ranging from zero to 0.033.

For both electronics cleaning and precision cleaning, HFE-7300's GWP of 310 is lower than or comparable to that of acceptable substitutes, such as HFE-7000, HFE-7100, HFC-365mfc, and HFC-43-10mee, with GWPs ranging from about 300 to 1,640. HFE-7300's GWP is higher than the GWPs of other acceptable substitutes for these end-uses, including acetone, *trans*-1,2-dichloroethylene, and HFE-7200 with GWPs ranging from less than 1 to 59. Its climate impacts cannot be compared directly to those of aqueous cleaners, which have zero GWP.

For metals cleaning, HFE-7300's GWP of 310 is lower than or comparable to that of acceptable substitutes, such as HFE-7100, HFC-365mfc and HFC-43-10mee, with GWPs ranging from about 300 to 1,640. HFE-7300's GWP is higher than the GWPs of other acceptable substitutes for this end-use including acetone, *trans*-1,2-dichloroethylene, and HFE-7200 with GWPs ranging from less than 1 to 59. Its climate impacts cannot be compared directly to those of aqueous cleaners, which have zero GWP.

Flammability and toxicity risks are comparable to or lower than flammability and toxicity risks of other available substitutes in the same end-uses. Toxicity risks can be minimized by use consistent with the manufacturer's AEL, recommendations in the SDS, and other safety precautions common in the solvent cleaning industry.

EPA finds HFE-7300 acceptable in the end-uses listed above because it does not pose greater overall environmental and human health risk than other available substitutes in the same end-uses.

II. Section 612 Program

A. Statutory Requirements and Authority for the SNAP Program

Section 612 of the CAA requires 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:

1. Rulemaking

Section 612(c) requires EPA to promulgate rules making it unlawful to replace any class I substance (CFC, halon, carbon tetrachloride, methyl chloroform, methyl bromide, hydrobromofluorocarbon, and chlorobromomethane) or class II substance (HCFC) 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.

2. Listing of Unacceptable/Acceptable Substitutes

Section 612(c) requires EPA to publish a list of the substitutes unacceptable for specific uses and to publish a corresponding list of acceptable alternatives for specific uses. The list of ''acceptable'' substitutes is found at *www.epa.gov/snap/substitutes-sector* and the lists of ''unacceptable,'' ''acceptable subject to use conditions,'' and ''acceptable subject to narrowed use limits'' substitutes are found in the appendices to 40 CFR part 82 subpart G.

3. 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 six months.

4. 90-Day Notification

Section 612(e) directs 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.

5. 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.

6. 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. EPA's Regulations Implementing Section 612

On March 18, 1994, EPA published the initial SNAP rule (59 FR 13044) which established the process for administering the SNAP program and issued EPA's first lists identifying acceptable and unacceptable substitutes in the major industrial use sectors (subpart G of 40 CFR part 82). These sectors are the following: Refrigeration and air conditioning; foam blowing; solvents cleaning; fire suppression and explosion protection; sterilants; aerosols; adhesives, coatings and inks; and tobacco expansion. These sectors comprise the principal industrial sectors that historically consumed the largest volumes of ODS.

Section 612 of the CAA requires EPA to list as acceptable those substitutes that do not present a significantly greater risk to human health and the environment as compared with other substitutes that are currently or potentially available.

C. How the Regulations for the SNAP Program Work

Under the SNAP regulations, anyone who plans to market or produce a substitute to replace a class I substance or class II substance in one of the eight

[27] In contrast, the historically used ODS CFC-113, methyl chloroform, HCFC-225ca, and HCFC-225cb have ODPs ranging from 0.02 to 0.8.

major industrial use sectors must provide the Agency with notice and the required health and safety information on the substitute at least 90 days before introducing it into interstate commerce for significant new use as an alternative (40 CFR 82.176(a)). While this requirement typically applies to chemical manufacturers as the entity likely to be planning to introduce the substitute into interstate commerce,[28] it may also apply to importers, formulators, equipment manufacturers, and end users [29] when they are responsible for introducing a substitute into commerce. The 90-day SNAP review process begins once EPA receives the submission and determines that the submission includes complete and adequate data (40 CFR 82.180(a)). The CAA and the SNAP regulations, 40 CFR 82.174(a), prohibit use of a substitute earlier than 90 days after notice has been provided to the Agency.

The Agency has identified four possible decision categories for substitute submissions: Acceptable; acceptable subject to use conditions; acceptable subject to narrowed use limits; and unacceptable (40 CFR 82.180(b)).[30] Use conditions and narrowed use limits are both considered ''use restrictions'' and are explained below. Substitutes that are deemed acceptable without use conditions may be used for all applications within the relevant end-uses within the sector and without limits under SNAP on how they may be used. Substitutes that are acceptable subject to use restrictions may be used only in accordance with those restrictions. Substitutes that are found to be unacceptable may not be used after the date specified in the rulemaking adding such substitute to the list of unacceptable substitutes.[31]

After reviewing a substitute, the Agency may make a determination that a substitute is acceptable only if certain conditions in the way that the substitute is used are met to minimize risks to human health and the environment. EPA describes such substitutes as ''acceptable subject to use conditions.'' Entities that use these substitutes without meeting the associated use conditions are in violation of EPA's SNAP regulations (40 CFR 82.174(c)).

For some substitutes, the Agency may permit a narrowed range of use within an end-use or sector. For example, the Agency may limit the use of a substitute to certain end-uses or specific applications within an industry sector. The Agency generally requires a user of a substitute subject to narrowed use limits to demonstrate that no other acceptable substitutes are available for their specific application.[32] EPA describes these substitutes as ''acceptable subject to narrowed use limits.'' A person using a substitute that is acceptable subject to narrowed use limits in applications and end-uses that are not consistent with the narrowed use limit is using the substitute in violation of section 612 of the CAA and EPA's SNAP regulations (40 CFR 82.174(c)).

The section 612 mandate for EPA to prohibit the use of a substitute that may present risk to human health or the environment where a lower risk alternative is available or potentially available'' [33] provides EPA with the authority to change the listing status of a particular substitute if such a change is justified by new information or changed circumstance.

As described in this document and elsewhere, including the initial SNAP rule published in the **Federal Register** at 59 FR 13044 on March 18, 1994, the SNAP program evaluates substitutes within a comparative risk framework. The SNAP program compares new substitutes both to the ozone-depleting substances being phased out under the *Montreal Protocol on Substances that Deplete the Ozone Layer* and the CAA, and to other available or potentially available alternatives for the same end-uses. The environmental and health risk factors that the SNAP program considers include ozone depletion potential, flammability, toxicity, occupational and consumer health and safety, as well as contributions to global warming and other environmental factors. Environmental and human health exposures can vary significantly depending on the particular application of a substitute—and over time, information applicable to a substitute can change. This approach does not imply fundamental tradeoffs with respect to different types of risk, either to the environment or to human health. Over the past twenty years, the menu of substitutes has become much broader and a great deal of new information has been developed on many substitutes. Because the overall goal of the SNAP program is to ensure that substitutes listed as acceptable do not pose significantly greater risk to human health and the environment than other available substitutes, the SNAP criteria should be informed by our current overall understanding of environmental and human health impacts and our experience with and current knowledge about available and potentially available substitutes. Over time, the range of substitutes reviewed by SNAP has changed, and, at the same time, scientific approaches have evolved to more accurately assess the potential environmental and human health impacts of these chemicals and alternative technologies. The Agency publishes its SNAP program decisions in the **Federal Register**. EPA uses notice-and-comment rulemaking to place any alternative on the list of prohibited substitutes, to list a substitute as acceptable only subject to use conditions or narrowed use limits, or to remove a substitute from either the list of prohibited or acceptable substitutes.

In contrast, EPA publishes ''notices of acceptability'' or ''determinations of acceptability,'' to notify the public of substitutes that are deemed acceptable with no restrictions. As described in the

[28] As defined at 40 CFR 82.104, ''interstate commerce'' means the distribution or transportation of any product between one state, territory, possession or the District of Columbia, and another state, territory, possession or the District of Columbia, or the sale, use or manufacture of any product in more than one state, territory, possession or District of Columbia. The entry points for which a product is introduced into interstate commerce are the release of a product from the facility in which the product was manufactured, the entry into a warehouse from which the domestic manufacturer releases the product for sale or distribution, and at the site of United States Customs clearance.

[29] As defined at 40 CFR 82.172, ''end-use'' means processes or classes of specific applications within major industrial sectors where a substitute is used to replace an ODS.

[30] The SNAP regulations also include ''pending,'' referring to submissions for which EPA has not reached a determination, under this provision.

[31] As defined at 40 CFR 82.172, ''use'' means any use of a substitute for a Class I or Class II ozone-depleting compound, including but not limited to use in a manufacturing process or product, in consumption by the end-user, or in intermediate uses, such as formulation or packaging for other subsequent uses. This definition of use encompasses manufacturing process of products both for domestic use and for export. Substitutes manufactured within the United States exclusively for export are subject to SNAP requirements since the definition of use in the rule includes use in the manufacturing process, which occurs within the United States.

[32] In the case of the July 20, 2015, final rule, EPA established narrowed use limits for certain substitutes over a limited period of time for specific MVAC and foam applications, on the basis that other acceptable alternatives would not be available for those specific applications within broader end-uses, but acceptable alternatives were expected to become available over time, *e.g.,* after military qualification testing for foam blowing agents in military applications or after development of improved servicing infrastructure in a destination country for MVAC in vehicles destined for export.

[33] In addition to acceptable commercially available substitutes, the SNAP program may consider potentially available substitutes. The SNAP program's definition of ''potentially available'' is ''any alternative for which adequate health, safety, and environmental data, as required for the SNAP notification process, exist to make a determination of acceptability, and which the agency reasonably believes to be technically feasible, even if not all testing has yet been completed and the alternative is not yet produced or sold.'' (40 CFR 82.172)

preamble to the rule initially implementing the SNAP program (59 FR 13044; March 18, 1994), EPA does not believe that rulemaking procedures are necessary to list alternatives that are acceptable without restrictions because such listings neither impose any sanction nor prevent anyone from using a substitute.

Many SNAP listings include ''comments'' or ''further information'' to provide additional information on substitutes. Since this additional information is not part of the regulatory decision, these statements are not binding for use of the substitute under the SNAP program. However, regulatory requirements so listed are binding under other regulatory programs (*e.g.,* worker protection regulations promulgated by OSHA). The ''further information'' classification does not necessarily include all other legal obligations pertaining to the use of the substitute. While the items listed are not legally binding under the SNAP program, EPA encourages users of substitutes to apply all statements in the ''further information'' column in their use of these substitutes. In many instances, the information simply refers to sound operating practices that have already been identified in existing industry and/or building codes or standards. Thus many of the statements, if adopted, would not require the affected user to make significant changes in existing operating practices.

D. Additional Information About the SNAP Program

For copies of the comprehensive SNAP lists of substitutes or additional information on SNAP, refer to EPA's Ozone Depletion Web site at: *www.epa.gov/snap.* For more information on the Agency's process for administering the SNAP program or criteria for evaluation of substitutes, refer to the initial SNAP rulemaking published March 18, 1994 (59 FR 13044), codified at 40 CFR part 82, subpart G. SNAP decisions and the appropriate **Federal Register** citations are found at: *www.epa.gov/snap/snap-regulations.*

List of Subjects in 40 CFR Part 82

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

Dated: June 28, 2017.

Reid P. Harvey,

Acting Director, Office of Atmospheric Programs.

Appendix A: Summary of Decisions for New Acceptable Substitutes

REFRIGERATION AND AIR CONDITIONING

End-use	Substitute	Decision	Further information [1]
Cold storage warehouses *(new and retrofit equipment).*	R-448A	Acceptable	R-448A has a 100-yr global warming potential (GWP) of approximately 1,390. This substitute is a blend of HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); HFO-1234yf, which is also known as 2,3,3,3-tetrafluoro-prop-l-ene (CAS Reg. No. 754–12–1); and HFO-1234ze(E), which is also known as *trans*-1,3,3,3-tetrafluoroprop-l-ene (CAS Reg. No. 29118–24–9). The blend is nonflammable. The American Industrial Hygiene Association (AIHA) has established Workplace Environmental Exposure Limits (WEELs) of 1,000 ppm on an eight-hour time-weighted average (8-hr TWA) basis for HFC-32, HFC-125, and HFC-134a; 500 ppm for HFO-1234yf; and 800 ppm for HFO-1234ze(E). The manufacturer recommends an acceptable exposure limit (AEL) for the workplace for R-448A of 890 ppm (8-hr TWA).
Cold storage warehouses *(new and retrofit equipment).*	R-449A	Acceptable	R-449A has a 100-year GWP of approximately 1,400. This substitute is a blend of HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); and HFO-1234yf, which is also known as 2,3,3,3-tetrafluoroprop-l-ene (CAS Reg. No. 754–12–1). The blend is nonflammable. The AIHA has established WEELs of 1,000 ppm (8-hr TWA) for HFC-32, HFC-125, and HFC-134a; and 500 ppm for HFO-1234yf. The manufacturer recommends an AEL for the workplace for R-449A of 830 ppm (8-hr TWA).
Cold storage warehouses *(new and retrofit equipment).*	R-449B	Acceptable	R-449B has a 100-year GWP of approximately 1,410. This substitute is a blend of HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); and HFO-1234yf, which is also known as 2,3,3,3-tetrafluoroprop-l-ene (CAS Reg. No. 754–12–1). The blend is nonflammable. The AIHA has established WEELs of 1,000 ppm (8-hr TWA) for HFC-32, HFC-125, and HFC-134a; and 500 ppm for HFO-1234yf. The manufacturer recommends an AEL for the workplace for R-449B of 850 ppm (8-hr TWA).

REFRIGERATION AND AIR CONDITIONING—Continued

End-use	Substitute	Decision	Further information [1]
Cold storage warehouses *(new and retrofit equipment)*.	R-453A	Acceptable	R-453A has a 100-year GWP of approximately 1,770. This substitute is a blend of HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); HFC-227ea, which is also known as 1,1,1,2,3,3,3-heptafluoropropane (CAS Reg. No. 439–89–0); R-;600, which is also known as butane (CAS Reg. No. 75–28–5); and R-601a, which is also known as isopentane (CAS Reg. No. 78–78–4). The blend is nonflammable. The AIHA has established WEELs of 1,000 ppm (8-hr TWA) for HFC-32, HFC-125, HFC-134a, and HFC-227ea, and the American Conference of Governmental Industrial Hygienists has established a Threshold Limit Value (TLV) of 1,000 ppm for R-600 and a TLV of 600 ppm for R-601a, both as an 8-hr TWA. The manufacturer recommends an AEL for the workplace for R-453A of 1000 ppm (8-hour TWA).
Industrial process refrigeration *(new and retrofit equipment)*.	R-448A	Acceptable	R-448A has a 100-yr GWP of approximately 1,390. This substitute is a blend of HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); HFO-1234yf, which is also known as 2,3,3,3-tetrafluoro-prop-l-ene (CAS Reg. No. 754–12–1); and HFO-1234ze(E), which is also known as *trans*-1,3,3,3-tetrafluoroprop-l-ene (CAS Reg. No. 29118–24–9). The blend is nonflammable. The AIHA has established WEELs of 1,000 ppm (8-hr TWA) for HFC-32, HFC-125, and HFC-134a; 500 ppm for HFO-1234yf; and 800 ppm for HFO-1234ze(E). The manufacturer recommends an AEL for the workplace for R-448A of 890 ppm (8-hr TWA).
Industrial process refrigeration *(new and retrofit equipment)*.	R-449A	Acceptable	R-449A has a 100-year GWP of approximately 1,400. This substitute is a blend of HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); and HFO-1234yf, which is also known as 2,3,3,3-tetrafluoroprop-l-ene (CAS Reg. No. 754–12–1). The blend is nonflammable. The AIHA has established WEELs of 1,000 ppm (8-hr TWA) for HFC-32, HFC-125, and HFC-134a; and 500 ppm for HFO-1234yf. The manufacturer recommends an AEL for the workplace for R-449A of 830 ppm (8-hr TWA).
Industrial process refrigeration *(new and retrofit equipment)*.	R-449B	Acceptable	R-449B has a 100-year GWP of approximately 1,410. This substitute is a blend of HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); and HFO-1234yf, which is also known as 2,3,3,3-tetrafluoroprop-l-ene (CAS Reg. No. 754–12–1). The blend is nonflammable. The AIHA has established WEELs of 1,000 ppm (8-hr TWA) for HFC-32, HFC-125, and HFC-134a; and 500 ppm for HFO-1234yf. The manufacturer recommends an AEL for the workplace for R-449B of 850 ppm (8-hr TWA).
Industrial process refrigeration *(new and retrofit equipment)*.	R-453A	Acceptable	R-453A has a 100-year GWP of approximately 1,770. This substitute is a blend of HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); HFC227ea, which is also known as 1,1,1,2,3,3,3-heptafluoropropane (CAS Reg. No. 439–89–0); R-600, which is also known as butane (CAS Reg. No. 75–28–5); and R-601a, which is also known as isopentane (CAS Reg. No. 78–78–4). The blend is nonflammable. The AIHA has established WEELs of 1,000 ppm (8-hr TWA) for HFC-32, HFC-125, HFC-134a, and HFC-227ea, and the American Conference of Governmental Industrial Hygienists has established a Threshold Limit Value (TLV) of 1,000 ppm for R-600 and a TLV of 600 ppm for R-601a, both as an 8-hr TWA. The manufacturer recommends an AEL for the workplace for R-453A of 1000 ppm (8-hour TWA).

REFRIGERATION AND AIR CONDITIONING—Continued

End-use	Substitute	Decision	Further information [1]
Industrial process refrigeration *(new and retrofit equipment)*.	R-458A	Acceptable	R-458A has a 100-yr GWP of approximately 1,650. This substitute is a blend of HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); HFC-227ea, which is also known as 1,1,1,2,3,3,3-heptafluoropropane (CAS Reg. No. 431–89–0); and HFC-236fa, which is also known as 1,1,1,3,3,3-hexafluoropropane (CAS Reg. No. 690–39–1). The blend is nonflammable. The AIHA has established WEELs of 1,000 ppm (8-hr TWA) for HFC-32, HFC-125, HFC-134a, HFC-227ea, and HFC-236fa.
Non-mechanical heat transfer systems *(new and retrofit equipment)*.	HFE-7300 (1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy-4-(trifluoromethyl)pentane).	Acceptable	HFE-7300 (CAS Reg. No. 132182–92–4) has no ozone depletion potential (ODP) and a 100-year GWP of approximately 310. This compound is nonflammable. The manufacturer recommends an AEL for the workplace for HFE-7300 of 100 ppm (8-hr TWA). This substitute is subject to a Toxic Substance Control Act (TSCA) section 5(a)(2) Significant New Use Rule (SNUR) (40 CFR 721.10061).
Refrigerated transport—refrigerated trucks and trailers *(new and retrofit equipment)*.	R-452A	Acceptable	R-452A has a 100-year GWP of approximately 2,140. This substitute is a blend of HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); and HFO-1234yf, which is also known as 2,3,3,3-tetrafluoroprop-l-ene (CAS Reg. No. 754–12–1). The blend is nonflammable. The AIHA has established WEELs of 1,000 ppm (8-hr TWA) for HFC-32 and HFC-125; and 500 ppm for HFO-1234yf. The manufacturer recommends an AEL for the workplace for R-452A of 786 ppm (8-hour TWA).
Refrigerated transport—refrigerated trucks and trailers *(new and retrofit equipment)*.	R-452C	Acceptable	R-452C has a 100-year GWP of approximately 2,220. This substitute is a blend of HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); and HFO-1234yf, which is also known as 2,3,3,3-tetrafluoroprop-l-ene (CAS Reg. No. 754–12–1). The blend is nonflammable. The AIHA has established WEELs of 1,000 ppm (8-hr TWA) for HFC-32 and HFC-125; and 500 ppm for HFO-1234yf.
Residential dehumidifiers *(new and retrofit equipment)*.	R-513A	Acceptable	R-513A has a 100-year GWP of approximately 630. This substitute is a blend of HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); and HFO-1234yf, which is also known as 2,3,3,3-tetrafluoroprop-l-ene (CAS Reg. No. 754–12–1). This blend is nonflammable. The AIHA has established WEELs of 1,000 ppm and 500 ppm (8-hr TWA) for HFC-134a and HFO-1234yf, respectively. The manufacturer recommends an AEL for the workplace for R-513A of 653 ppm (8-hr TWA).
Residential and light commercial air conditioning and heat pumps *(retrofit equipment)*.	HFC-134a	Acceptable	HFC-134a has a 100-year GWP of 1,430. HFC-134a is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2). HFC-134a is nonflammable. The AIHA has established a WEEL of 1,000 ppm (8-hr TWA) for HFC-134a.
Residential and light commercial air conditioning and heat pumps *(retrofit equipment)*.	R-458A	Acceptable	R-458A has a 100-yr GWP of approximately 1,650. This substitute is a blend of HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); HFC-227ea, which is also known as 1,1,1,2,3,3,3-heptafluoropropane (CAS Reg. No. 431–89–0); and HFC-236fa, which is also known as 1,1,1,3,3,3-hexafluoropropane (CAS Reg. No. 690–39–1). This blend is nonflammable. The AIHA has established WEELs of 1,000 ppm (8-hr TWA) for HFC-32, HFC-125, HFC-134a, HFC-227ea, and HFC-236fa.

REFRIGERATION AND AIR CONDITIONING—Continued

End-use	Substitute	Decision	Further information [1]
Retail food refrigeration—remote condensing units *(new and retrofit equipment)*.	R-407H	Acceptable	R-407H has a 100-yr GWP of approximately 1,500. This substitute is a blend of HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); and HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6). This blend is nonflammable. The AIHA has established WEELs of 1,000 ppm (8-hr TWA) for HFC-134a, HFC-32, and HFC-125. The manufacturer recommends an AEL for the workplace for R-407H of 1,000 ppm (8-hour TWA).
Retail food refrigeration—remote condensing units *(new and retrofit equipment)*.	R-442A	Acceptable	R-442A has a 100-yr GWP of approximately 1,890. This substitute is a blend of HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); HFC-227ea, which is also known as 1,1,1,2,3,3,3-heptafluoropropane (CAS Reg. No. 431–89–0); and HFC-152a, which is known as 1,1-difluoroethane (CAS Reg. No. 75–37–6). This blend is nonflammable. The AIHA has established WEELs of 1,000 ppm (8-hr TWA) for HFC-32, HFC-125, HFC-134a, HFC-227ea, and HFC-152a. The manufacturer of R-442A recommends an AEL of 1,000 ppm on an 8-hour TWA for the blend.
Retail food refrigeration—remote condensing units *(new and retrofit equipment)*.	R-452A	Acceptable	R-452A has a 100-year GWP of approximately 2,140. This substitute is a blend of HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); and HFO-1234yf, which is also known as 2,3,3,3-tetrafluoroprop-l-ene (CAS Reg. No. 754–12–1). The blend is nonflammable. The AIHA has established WEELs of 1,000 ppm (8-hr TWA) for HFC-32 and HFC-125; and 500 ppm for HFO-1234yf. The manufacturer recommends an AEL for the workplace for R-452A of 786 ppm (8-hour TWA).
Retail food refrigeration— remote condensing units *(new and retrofit equipment)*.	R-452C	Acceptable	R-452C has a 100-year GWP of approximately 2,220. This substitute is a blend of HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); and HFO-1234yf, which is also known as 2,3,3,3-tetrafluoroprop-l-ene (CAS Reg. No. 754–12–1). The blend is nonflammable. The AIHA has established WEELs of 1,000 ppm (8-hr TWA) for HFC-32 and HFC-125; and 500 ppm for HFO-1234yf.
Retail food refrigeration—remote condensing units *(new and retrofit equipment)*.	R-453A	Acceptable	R-453A has a 100-year GWP of approximately 1,770. This substitute is a blend of HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); HFC227ea, which is also known as 1,1,1,2,3,3,3-heptafluoropropane (CAS Reg. No. 439–89–0); R-600, which is also known as butane (CAS Reg. No. 75–28–5); and R-601a, which is also known as isopentane (CAS Reg. No. 78–78–4). The blend is nonflammable. The AIHA has established WEELs of 1,000 ppm (8-hr TWA) for HFC-32, HFC-125, HFC-134a, and HFC-227ea, and the American Conference of Governmental Industrial Hygienists has established a Threshold Limit Value (TLV) of 1,000 ppm for R-600 and a TLV of 600 ppm for R-601a, both as an 8-hr TWA. The manufacturer recommends an AEL for the workplace for R-453A of 1000 ppm (8-hour TWA).
Retail food refrigeration—remote condensing units *(new and retrofit equipment)*.	R-458A	Acceptable	R-458A has a 100-yr GWP of approximately 1,650. This substitute is a blend of HFC-32, which is also known as difluoromethane (CAS Reg. No. 75–10–5); HFC-125, which is also known as 1,1,1,2,2-pentafluoroethane (CAS Reg. No. 354–33–6); HFC-134a, which is also known as 1,1,1,2-tetrafluoroethane (CAS Reg. No. 811–97–2); HFC-227ea, which is also known as 1,1,1,2,3,3,3-heptafluoropropane (CAS Reg. No. 431–89–0); and HFC–236fa, which is also known as 1,1,1,3,3,3-hexafluoropropane (CAS Reg. No. 690–39–1). This blend is nonflammable. The AIHA has established WEELs of 1,000 ppm (8-hr TWA) for HFC-32, HFC-125, HFC-134a, HFC-227ea, and HFC-236fa.

CLEANING SOLVENTS

End-use	Substitute	Decision	Further information [1]
Electronics cleaning, metals cleaning, precision cleaning.	HFE-7300 ..... (1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy-4-(trifluoromethyl)pentane).	Acceptable	HFE-7300 (CAS Reg. No. 132182–92–4) has no ozone depletion potential (ODP) and a 100-year GWP of approximately 310. It is excluded from the definition of volatile organic compounds under CAA regulations (see 40 CFR 51.100(s)) addressing the development of state implementation plans (SIPs) to attain and maintain the National Ambient Air Quality Standards (NAAQS). This compound is nonflammable. The manufacturer recommends an AEL for the workplace for HFE-7300 of 100 ppm (8-hr TWA). This substitute is subject to a Toxic Substance Control Act (TSCA) section 5(a)(2) Significant New Use Rule (SNUR) (40 CFR 721.10061).

[1] Observe recommendations in the manufacturer's SDS and guidance for all listed substitutes.

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FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 1, 73 and 74

[AU Docket No. 17–143; DA 17–533; DA 17–668]

Filing Instructions for Cross-Service FM Translator Auction Filing Window for AM Broadcasters To Be Open July 26–August 2, 2017; Freeze on FM Translator and Low-Power FM Station Minor Change Applications and FM Booster Applications July 19–August 2, 2017; Availability of Online Tutorial; Clarification of Eligible Applicants

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: In the document released June 6, 2017, the Media Bureau and the Wireless Telecommunications Bureau released instructions for filing applications in a filing window to be open from July 26, 2017, through August 2, 2017, in which certain AM station licensees and proposed assignees may seek new FM translator construction permits to retransmit the signals of the primary AM stations. In addition, the Media Bureau announced that it will not accept low-power FM and FM translator minor change construction permit applications and FM booster construction permit applications between July 19 and August 2, 2017. In the document released July 13, 2017, Commission staff announced that an online tutorial would be available for this auction, which is designated as Auction 99, and addressed a petition for clarification on an issue of applicant eligibility for this filing window opportunity.

DATES: From 12:01 a.m. Eastern Time (ET) on July 19, 2017, until midnight ET on August 2, 2017, there is a filing freeze for low-power FM and FM translator minor change construction permit applications and for FM booster construction permit applications. Starting at 12:01 a.m. ET on July 26, 2017, and prior to 6:00 p.m. on August 2, 2017, an eligible applicant may file its FCC Form 349. Starting at 9:00 a.m. ET on July 26, 2017, and prior to 6:00 p.m. ET on August 2, 2017, an eligible applicant may file its FCC Form 175.

FOR FURTHER INFORMATION CONTACT: About broadcast radio or FCC Form 349, James Bradshaw, Lisa Scanlan or Tom Nessinger in the Media Bureau's Audio Division at (202) 418–2700. About FCC Form 175 and competitive bidding rules, Lynne Milne in the Wireless Telecommunications Bureau's Auctions and Spectrum Access Division at (202) 418–0660. About general auction procedures, the Auctions Hotline at (717) 338–2868.

SUPPLEMENTARY INFORMATION: This is a summary of a public notice released on June 6, 2017, supplemented by a related public notice released on July 13, 2017. The complete texts of these documents are available for public inspection and copying from 8:00 a.m. to 4:30 p.m. ET Monday through Thursday or from 8:00 a.m. to 11:30 a.m. ET on Fridays in the FCC Reference Information Center, 445 12th St. SW., Room CY–A257, Washington, DC 20554. The complete texts also are available on the Commission's Web site at *http://wireless.fcc.gov.* Alternative formats are available for persons with disabilities by sending an email to *FCC504@fcc.gov* or by calling the Consumer & Governmental Affairs Bureau at (202) 418–0530 (voice), (202) 418–0432 (TTY).

1. The Media Bureau will institute a freeze on the acceptance of FM booster construction permit applications, as well as minor change construction permit applications for FM translators or Low Power FM stations on all channels (channels 201–300) starting at 12:01 a.m. ET on July 19, 2017 until midnight ET on August 2, 2017. Any such applications filed during this freeze will be dismissed.

2. On June 6, 2017, the Media Bureau and the Wireless Telecommunications Bureau announced in a public notice (Filing Instructions Public Notice) details and filing instructions for certain AM broadcasters to apply for cross-service FM translator station construction permits in Auction 99. Eligibility for this filing opportunity is limited to any Class C or D AM station licensee or permittee, or the proposed assignee of such an AM station, wishing to file an application to establish a new cross-service FM translator to retransmit its AM station signal full time, provided that the AM primary station was not listed as the AM primary station in a FM translator modification application filed in either of the 2016 modification windows.

3. During this upcoming filing window, an applicant may propose only one cross-service FM translator for each Class C or D AM primary station to be rebroadcast. Any FM translator awarded through this filing window will only be authorized to rebroadcast the AM primary station identified in the applicant's FCC Form 349 Tech Box (or to originate nighttime programming during periods when a daytime-only AM primary station is not operating), on a permanent basis. The authorization for any FM translator station awarded through this filing window will be subject to a condition that it may not be assigned or transferred except in conjunction with the AM primary station that it rebroadcasts and with which it is commonly owned.

4. An eligible licensee or permittee, or proposed assignee if applicable, seeking a new cross-service FM translator for its AM station(s) must file electronically in the Media Bureau's Consolidated Database System (CDBS) prior to 6:00