

NEW HAMPSHIRE NONREGULATORY—Continued

Name of nonregulatory SIP provision	Applicable geographic or non-attainment area	State submittal date/effective date	EPA approved date <sup>3</sup>	Explanations
Letter from the New Hampshire Department of Environmental Services dated July 10, 1996 submitting a revision to the NH SIP.	Statewide .....	7/10/1996	8/16/1999, 64 FR 44417 .....	See 52.1535(c)(63).
Letter from the New Hampshire Air Resources Division dated July 17, 1998 submitting Final RACT Order 98-001 as a revision to the NH SIP.	Statewide .....	7/17/1998	11/14/2000, 65 FR 68078 .....	See 52.1535(c)(64).
Letter from the New Hampshire Department of Environmental Services dated August 16, 1999 submitting the Low Emission Vehicle program as a revision to the NH SIP.	Statewide .....	8/16/1999	3/9/2000, 65 FR 12476 .....	See 52.1535(c)(65).
Letter from the New Hampshire Air Resources Division dated July 29, 1993 submitting a revision to the New Hampshire State Implementation Plan.	Statewide .....	7/29/1993	7/27/2001, 66 FR 39100 .....	See 52.1535(c)(66).
Letter from the New Hampshire Air Resources Division dated July 2, 1999 submitting a revision to the New Hampshire State Implementation Plan.	Statewide .....	7/2/1999	7/27/2001, 66 FR 39100 .....	See 52.1535(c)(66).
Letter from the New Hampshire Department of Environmental Services dated September 11, 1998 stating a negative declaration for the aerospace coating operations Control Techniques Guideline category.	Statewide .....	9/11/1998	7/10/2000, 65 FR 42290 .....	See 52.1535(c)(67).
Letter from the DES, dated April 15, 2002, submitting revised Anheuser-Busch order to EPA as a SIP revision and withdrawing previous submittal for this facility dated June 20, 2000.	Merrimack, NH .....	4/15/2002	7/23/2002, 67 FR 48033 .....	See 52.1535(c)(68).
Letter from the DES, dated March 22, 2002, containing information on New Filcas of America.	Nashua, NH .....	3/22/2002	7/23/2002, 67 FR 48033 .....	See 52.1535(c)(68).

<sup>3</sup> In order to determine the EPA effective date for a specific provision listed in this table, consult the FEDERAL REGISTER notice cited in this column for the particular provision.

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**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 82**

[EPA-HQ-OAR-2003-0118; FRL-8959-2]

RIN 2060-AG12

**Protection of Stratospheric Ozone: Notice 24 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 for ozone-depleting substances under the U.S. Environmental Protection Agency's (EPA) Significant New Alternatives Policy (SNAP) program. The determinations concern new substitutes for use in the refrigeration and air conditioning and foam blowing sectors.

**DATES:** This determination is effective on September 30, 2009.

**ADDRESSES:** EPA has 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 <http://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 <http://www.regulations.gov> or in hard copy at the EPA Air Docket (No. A-91-42), EPA/DC, EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC. 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:** Margaret Sheppard by telephone at (202) 343-9163, by facsimile at (202) 343-2338, by e-mail at [sheppard.margaret@epa.gov](mailto:sheppard.margaret@epa.gov), or by mail at U.S. Environmental Protection Agency, Mail Code 6205J, 1200 Pennsylvania Avenue, NW., Washington, DC 20460. Overnight or courier deliveries should be sent to the office location at 1310 L Street, NW., 10th floor, Washington, DC 20005.

For more information on the Agency's process for administering the SNAP program or criteria for evaluation of substitutes, refer to the original 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 Depletion World Wide Web site at <http://www.epa.gov/ozone/> including the SNAP portion at <http://www.epa.gov/ozone/snap/>.

**SUPPLEMENTARY INFORMATION:**

- I. Listing of New Acceptable Substitutes
    - A. Refrigeration and Air Conditioning
    - B. Foam Blowing
  - II. Section 612 Program
    - A. Section 612 Statutory and Regulatory Background
    - B. Regulatory History
- Appendix A—Summary of Decisions for New Acceptable Substitutes

**I. Listing of New Acceptable Substitutes**

This section presents EPA's most recent acceptable listing decisions for substitutes in the refrigeration and air conditioning and foam blowing sectors. For copies of the full list of ozone depleting substance (ODS) substitutes in all industrial sectors, visit EPA's Ozone Depletion Web site at <http://www.epa.gov/ozone/>

[www.epa.gov/ozone/snap/lists/index.html](http://www.epa.gov/ozone/snap/lists/index.html).

The sections below discuss each substitute listing in detail. Appendix A contains a table summarizing today's listing decisions for new substitutes. The statements in the "Further Information" column in the table provide additional information, but are not legally binding under section 612 of the Clean Air Act (CAA). In addition, the "further information" may not be 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, EPA strongly encourages you to apply the information when using these substitutes. In many instances, the information simply refers to standard operating practices in existing industry and/or building-code standards. However, some of these statements may refer to obligations that are enforceable or binding under Federal or State programs other than the SNAP program. Thus, many of these statements, if adopted, would not require significant changes to existing operating practices.

You can find submissions to EPA for the use of the substitutes listed in this document and other materials supporting the decisions in this action in docket EPA-HQ-OAR-2003-0118 at <http://www.regulations.gov>.

*A. Refrigeration and Air Conditioning*

1. R-744 (CO<sub>2</sub>)

*EPA's decision: R-744 (carbon dioxide or CO<sub>2</sub>) is acceptable for use in new equipment as a substitute for chlorofluorocarbon (CFC)-12, R-502, hydrochlorofluorocarbon (HCFC)-22 and HCFC blends in:*

- Retail food refrigeration.
- Cold storage warehouses.

R-744 is carbon dioxide (CO<sub>2</sub>), CAS ID #124-38-9. You may find the submissions under Docket items EPA-HQ-OAR-2003-0118-0205, -0207, -0208 and -0223 at <http://www.regulations.gov>.

*Environmental information:* The ozone depletion potential (ODP) of CO<sub>2</sub> is zero. The 100-year global warming potential (GWP) of CO<sub>2</sub> is 1. The atmospheric lifetime of CO<sub>2</sub> is based upon a complex function of different processes in the carbon cycle, with some portion of CO<sub>2</sub> emissions expected to last 1000 years or longer (The International Panel on Climate Change [IPCC], Fourth Assessment Report, *Climate Change 2007: The Physical Science Basis*).

EPA's regulations codified at 40 CFR part 82, subpart F exempt CO<sub>2</sub> refrigerant from the venting prohibition under section 608 (c)(2) of the Clean Air Act. This section and EPA's implementing regulations prohibit the intentional venting or release of substitutes for class I or class II ODSs used during the repair, maintenance, service or disposal of refrigeration and air conditioning equipment (*i.e.*, appliances).

CO<sub>2</sub> is excluded from the definition of volatile organic compound (VOC) under Clean Air Act 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.

*Flammability information:* CO<sub>2</sub> is not flammable.

*Toxicity and exposure data:* Potential health effects of this substitute at lower concentrations include loss of concentration. The substitute may also irritate the skin or eyes or cause frostbite. At sufficiently high concentrations, it may cause central nervous system depression or death. The substitute could cause asphyxiation, if air is displaced by vapors in a confined space. These potential health effects are common to many refrigerants.

To protect against these potential health risks, CO<sub>2</sub> has an 8 hour/day, 40 hour/week permissible exposure limit (PEL) of 5000 ppm required by the Occupational Safety and Health Administration (OSHA) and a 15-minute recommended short-term exposure limit (STEL) of 30,000 ppm established by the National Institute for Occupational Safety and Health (NIOSH). EPA recommends that users follow all requirements and recommendations specified in the Material Safety Data Sheet (MSDS), in American Society for Heating and Refrigeration Engineers (ASHRAE) standard 15, and other safety precautions common in the refrigeration and air conditioning industry. We also recommend that users of R-744 adhere to NIOSH's STEL and to ASHRAE 15 and we expect that users will meet OSHA's PEL. EPA anticipates that users will be able to meet the PEL and STEL and will be able to address potential health risks by following requirements and recommendations in the MSDSs, in ASHRAE 15, and other safety precautions common in the refrigeration and air conditioning industry.

*Comparison to other refrigerants:* CO<sub>2</sub> (R-744) is not an ozone depleter in contrast to the ozone-depleting substances which it replaces. In its lack of risk for ozone depletion, R-744 is

comparable to a number of other substitutes for CFC-12, R-502, and HCFC-22 and its blends, such as R-404A, R-407C, R-410A, and R-507. (R-502 is a blend of 48.8% HCFC-22 and 51.2% CFC-115 by weight. CFC-12 has an ODP of 1.0 and a GWP of 10,890; CFC-115 has an ODP of 0.44 and a GWP of 7370; and HCFC-22 has an ODP of 0.05 and a GWP of 1810, according to the *Scientific Assessment of Ozone Depletion: 2006* prepared by the World Meteorological Organization (WMO, 2006).) R-744 has a GWP of 1, lower than that of other substitutes for CFC-12, R-502, and HCFC-22. For example, the GWP of R-404A is about 3930, the GWP of R-407C is about 3350, the GWP of R-410A is about 2100, and the GWP of R-507 is about 4000. Flammability and toxicity risks are low, as discussed above. Thus, we find that R-744 is acceptable because it does not pose a greater overall risk to public health and the environment than the other substitutes acceptable in the end uses listed above.

## 2. C6-Perfluoroketone

*EPA's decision: C6-perfluoroketone is acceptable as a substitute for CFC-113 for use in new and retrofit equipment in non-mechanical heat transfer.*

C6-perfluoroketone is also known as 1,1,1,2,2,4,5,5,5-nonafluoro-4-(trifluoromethyl)-3-pentanone or FK-5-1-12mm2 (CAS Reg. No. 756-13-8). It is marketed under the trade name Novec™ 649. EPA previously found this substitute acceptable in the fire protection sector (December 20, 2002; 67 FR 77927). You may find the most recent submission under Docket item EPA-HQ-OAR-2003-0118-0214 and -0216 at <http://www.regulations.gov>.

*Environmental information:* C6-perfluoroketone has no ODP. C6-perfluoroketone has a GWP of 0.6 to 1.8 and an atmospheric lifetime of up to 2 weeks (October 1, 2004; 69 FR 58903). C6-perfluoroketone is currently defined as a VOC under Clean Air Act regulations (see 40 CFR 51.100(s)) addressing the development of SIPs to attain and maintain the national ambient air quality standards.

*Flammability information:* C6-perfluoroketone is non-flammable.

*Toxicity and exposure data:* Potential health effects of this substitute include central nervous system depression or irregular heartbeat, at sufficiently high concentrations. These potential health effects are common to many refrigerants.

EPA anticipates that C6-perfluoroketone will be used consistent with the recommendations specified in the manufacturer's MSDSs. The manufacturer recommends a workplace

exposure limit of 150 ppm over an 8-hour time-weighted average for C6-perfluoroketone. EPA anticipates that users will be able to meet the manufacturer's recommended workplace exposure limit and will be able to address potential health risks by following requirements and recommendations in the MSDSs and other safety precautions common in the refrigeration and air conditioning industry.

*Comparison to other refrigerants:* C6-perfluoroketone is not ozone depleting in contrast to CFC-113, the ozone depleting substance which it replaces. In its lack of risk for ozone depletion, C6-perfluoroketone is comparable to other non-ozone-depleting substitutes for CFC-113, such as HFE-7100, HFC-245fa and CO<sub>2</sub>. (CFC-113, has an ozone depletion potential (ODP) of 1.0 relative to CFC-11 (WMO, 2006).) C6-perfluoroketone's GWP is less than 2, which is comparable to or lower than that of other substitutes for CFC-113 in heat transfer uses. For example, the GWP of HFE-7100 is about 297, the GWP of HFC-245fa is about 1030, and the GWP of CO<sub>2</sub> is 1. Additionally, the GWP for C6-perfluoroketone is significantly lower than the GWP for the ozone-depleting substance it will replace. (CFC-113 has a GWP of 6130 (WMO, 2006).) Flammability and toxicity risks are low, as discussed above. Thus, we find that C6-perfluoroketone is acceptable because it does not pose a greater overall risk to public health and the environment than the other substitutes acceptable in the end use listed above.

## 3. R-438A (ISCEON® MO99)

DuPont Fluoroproducts has notified EPA that it is using the name DuPont™ISCEON® MO99 in marketing the refrigerant blend that EPA reviewed under the name "KDD5". On October 4, 2007 (72 FR 56628), EPA found KDD5 acceptable as a substitute for HCFC-22 for a variety of end-uses. The composition of the formulation was originally requested to be confidential business information (CBI); however, the company has now removed the CBI restrictions. This blend has been given the designation R-438A in ASHRAE Standard 34. This blend is non-flammable and has ASHRAE safety classification A1.

### B. Foam Blowing

#### 1. Formacel® TI

*EPA's decision: Formacel® TI is acceptable as a substitute for HCFC-22 and HCFC-142b in:*

- Rigid Polyurethane Appliance Foam.
- Rigid Polyurethane Spray, Commercial Refrigeration, and Sandwich Panels.
- Integral Skin Polyurethane.
- Polyolefin.
- Rigid Polyurethane Slabstock and Other.
- Polystyrene Extruded Boardstock & Billet.
- Polystyrene Extruded Sheet.
- Rigid Polyurethane & Polyisocyanurate Laminated Boardstock.

Formacel® TI is a series of blends with different percentage contents of the same compounds. The submitter has claimed its composition as confidential business information. You may find the submission under Docket item EPA-HQ-OAR-2003-0118-0217 and -0219 at <http://www.regulations.gov>.

*Environmental information:*

Formacel® TI has no ODP. Formacel® TI blends range in global warming potential (GWP) from approximately 1330 to 1500. Formacel® TI does not contain volatile organic compounds (VOC) as defined under Clean Air Act 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.

*Flammability information:* Formacel® TI blends are not flammable.

*Toxicity and exposure data:* Potential health effects of this substitute include nausea, headache, weakness, or central nervous system depression with effects such as dizziness, drowsiness, confusion, or loss of consciousness. The substitute may also irritate the lungs, skin or eyes or cause frostbite. At high concentrations, the substitute may cause irregular heartbeat or death. The substitute could cause asphyxiation, if air is displaced by vapors in a confined space. These potential health effects are common to many foam blowing agents.

EPA anticipates that Formacel® TI will be used consistent with the recommendations specified in the manufacturer's Material Safety Data Sheets (MSDSs). The manufacturer recommends a workplace exposure limit of 1000 ppm on an 8-hour time-weighted average for Formacel® TI. EPA anticipates that users will be able to meet the manufacturer's recommended workplace exposure limits and will be able to address potential health risks by following requirements and recommendations in the MSDSs and other safety precautions common in the foam blowing industry.

*Comparison to other foam blowing agents:* Formacel® TI is not ozone

depleting in contrast to the ozone depleting substances which it replaces. (HCFC-22 and HCFC-142b have ODPs of 0.05 and 0.07, respectively (WMO, 2006).) In its lack of risk for ozone depletion, Formacel® TI is comparable to other substitutes for HCFC-22 and HCFC-142b, such as hydrofluorocarbon (HFC)-134a and HFC-245fa. Formacel® TI blends range in GWP from 1330 to 1500, comparable to or lower than that of other substitutes for HCFC-22 and HCFC-142b. For example, the GWP of HFC-134a is about 1430 and the GWP of HFC-245fa is about 1030. Additionally, the GWP for Formacel® TI is lower than the GWP for the ozone-depleting substances it will replace. (The GWPs of HCFC-22 and HCFC-142b are 1810 and 2310, respectively (WMO, 2006).) Flammability and toxicity risks are low, as discussed above. Thus, we find that Formacel® TI is acceptable because it does not pose a greater overall risk to public health and the environment than the other substitutes acceptable in the end use listed above.

## 2. HFO-1234ze

### EPA's decision:

*Hydrofluoroolefin*<sup>1</sup> (HFO)-1234ze is acceptable as a substitute for CFCs and HCFCs in:

- Rigid Polyurethane Appliance Foam.
- Rigid Polyurethane Spray, Commercial Refrigeration, and Sandwich Panels.
- Polystyrene Extruded Boardstock & Billet.

HFO-1234ze is also known as HFC-1234ze or trans-1,3,3,3-tetrafluoroprop-1-ene (CAS Reg. No.29118-24-9). You may find the submission under Docket item EPA-HQ-OAR-2003-0118-0222 at <http://www.regulations.gov>.

*Environmental information:* HFO-1234ze has no ODP. HFO-1234ze has a GWP of 6 and an atmospheric lifetime of approximately 2 weeks ("Atmospheric chemistry of trans-CF<sub>3</sub>CH=CHF: products and mechanisms of hydroxyl radical and chlorine atom initiated oxidation," M.S. Javadi, R. Søndergaard, O.J. Nielsen, M.D. Hurley, and T.J. Wellington, *Atmospheric Chemistry and Physics Discussions* 8, 1069-1088, 2008). HFO-1234ze is currently defined as a VOC as defined under Clean Air Act regulations (see 40 CFR 51.100(s)) addressing the development of SIPs to attain and maintain the national ambient air quality standards.

<sup>1</sup>Hydrofluoroolefins are a subset of hydrofluorocarbons that contain double bonds between carbon atoms.

*Flammability information:* HFO-1234ze is non-flammable.

*Toxicity and exposure data:* Potential health effects of this substitute at lower concentrations include drowsiness and dizziness. The substitute may also irritate the skin or eyes or cause frostbite. At sufficiently high concentrations, it may cause central nervous system depression or irregular heartbeat. The substitute could cause asphyxiation, if air is displaced by vapors in a confined space. The substitute may also irritate the lungs, skin or eyes or cause frostbite. These potential health effects are common to many foam blowing agents.

EPA anticipates that HFO-1234ze will be used consistent with the recommendations specified in the manufacturer's MSDSs. EPA recommends a preliminary workplace exposure limit of 375 ppm for HFO-1234ze. EPA anticipates that users will be able to meet this recommended workplace exposure limit and will be able to address potential health risks by following requirements and recommendations in the MSDSs and other safety precautions common in the foam blowing industry. Further, EPA is reviewing this substance as a Pre-manufacture Notice under the Toxic Substances Control Act (TSCA). Therefore, use of HFO-1234ze must be in accord with EPA's final decision under TSCA.

*Comparison to other foam blowing agents:* HFO-1234ze is not ozone depleting in contrast to the ozone depleting substances which it replaces. In its lack of risk for ozone depletion, HFO-1234ze is comparable to other substitutes for HCFC-22 and HCFC-142b, such as HFC-134a and HFC-245fa. (HCFC-22 and HCFC-142b have ODPs of 0.05 and 0.07, respectively (WMO, 2006).) HFO-1234ze's GWP is 6, comparable to or lower than that of other substitutes for HCFC-22 and HCFC-142b. For example, the GWP of HFC-134a is about 1430 and the GWP of HFC-245fa is about 1030. Additionally, the GWP for HFO-1234ze is significantly lower than the GWPs for the ozone-depleting substances it will replace. (The GWPs of HCFC-22 and HCFC-142b are 1810 and 2310, respectively (WMO, 2006).) Flammability risks can be addressed by procedures common in the industry. The toxicity risks are low, as discussed above. Thus, we find that HFO-1234ze is acceptable because it does not pose a greater overall risk to public health and the environment than the other substitutes acceptable in the end uses listed above.

## 3. HFC-365mfc

*EPA's decision:* HFC-365mfc is acceptable as a substitute for HCFC-141b in:

- Rigid Polyurethane Appliance Foam.
- Rigid Polyurethane Commercial Refrigeration and Sandwich Panels.
- Flexible Polyurethane.
- Integral Skin Polyurethane.
- Polystyrene Extruded Sheet.
- Polyolefin.
- Rigid Polyurethane Slabstock and Other.
- Polystyrene Extruded Boardstock & Billet.
- Rigid Polyurethane & Polyisocyanurate Laminated Boardstock.
- Phenolic Insulation Board & Bunstock.

HFC-365mfc is also known as 1,1,1,3,3-pentafluorobutane (CAS Reg. No. 405-58-6). EPA previously found HFC-365mfc acceptable as an aerosol solvent and as a solvent in metals, electronics, and precision cleaning (December 18, 2000; 65 FR 78977). You may find the submission under Docket items EPA-HQ-OAR-2003-0118-0221 and -0224 at <http://www.regulations.gov>.

*Environmental information:* HFC-365mfc has no ODP. HFC-365mfc has a GWP of 794 and an atmospheric lifetime of 8.6 years (IPCC, 2007). HFC-365mfc is not a VOC as defined under Clean Air Act regulations (see 40 CFR 51.100(s)) addressing the development of SIPs to attain and maintain the national ambient air quality standards.

*Flammability information:* HFC-365mfc is mildly flammable with a flashpoint below -27 °C and a lower flammability limit of 3.6% by volume in air. Thus, it should be handled with proper precautions. EPA recommends that users follow all requirements and recommendations specified in the MSDS and other safety precautions for use of flammable blowing agents used in the foam blowing industry. Use of HFC-365mfc will require safe handling and shipping as prescribed by the Occupational Safety and Health Administration (OSHA) and the Department of Transportation (for example, using personal safety equipment and following requirements for shipping hazardous materials at 49 CFR parts 170 through 173).

*Toxicity and exposure data:* Potential health effects of this substitute include irritation of the lungs, skin or eyes or frostbite. At high concentrations, the substitute may also cause irregular heartbeat, unconsciousness, or death. The substitute could cause asphyxiation, if air is displaced by

vapors in a confined space. These potential health effects are common to many foam blowing agents.

EPA anticipates that HFC-365mfc will be used consistent with the recommendations specified in the manufacturer's MSDSs. The manufacturer recommends a workplace exposure limit of 1000 ppm on an 8-hour time-weighted average for HFC-365mfc. EPA anticipates that users will be able to meet the manufacturer's recommended workplace exposure limits and will be able to address potential health risks by following requirements and recommendations in the MSDSs and other safety precautions common in the foam blowing industry.

*Comparison to other foam blowing agents:* HFC-365mfc is not ozone depleting in contrast to the ozone depleting substances which it replaces. (HCFC-141b has an ODP of 0.12 (WMO, 2006).) In its lack of risk for ozone depletion, HFC-365mfc is comparable to other non-ozone-depleting substitutes for HCFC-141b, such as HFC-134a and HFC-245fa. HFC-365mfc's GWP is 794, comparable to or lower than that of other substitutes for HCFC-141b. For example, the GWP of HFC-134a is about 1430 and the GWP of HFC-245fa is about 1030. Additionally, the GWP for HFC-365mfc is comparable to the GWP for the ozone-depleting substance it will replace. (The GWP of HCFC-141b is 725 (WMO, 2006)). Flammability risks can be addressed by procedures common in the industry. The toxicity risks are low, as discussed above. Thus, we find that HFC-365mfc is acceptable because it does not pose a greater overall risk to public health and the environment than the other substitutes acceptable in the end use listed above.

#### 4. Blends of HFC-365mfc and HFC-245fa

*EPA's decision: Blends of HFC-365mfc and HFC-245fa containing at least 5% HFC-245fa are acceptable as substitutes for HCFC-141b in:*

- Rigid Polyurethane Spray, Commercial Refrigeration and Sandwich Panels

Additional information about HFC-365mfc is in the decision above in this section. HFC-245fa is also known as 1,1,1,3,3-pentafluoropropane (CAS Reg. No. 460-73-1). EPA previously found HFC-245fa acceptable as a foam blowing agent, as an aerosol solvent, and as a refrigerant (August 21, 2003, 68 FR 50533; March 22, 2002, 76 FR 13272; June 19, 2000, 65 FR 37900; March 29, 2006; 71 FR 15589). The submitter expects that users would use blends containing at least 5 percent HFC-245fa by weight with the remainder being

HFC-365mfc, with blends typically containing 30 to 70 percent HFC-245fa and 70 to 30 percent HFC-365mfc. You may find the information on blends of HFC-365mfc and HFC-245fa under Docket item EPA-HQ-OAR-2003-0118-0227 at <http://www.regulations.gov>.

*Environmental information:* For environmental information about HFC-365mfc, see the decision above in this section. HFC-245fa has no ODP. HFC-245fa has a GWP of 1030 and an atmospheric lifetime of 7.6 years (IPCC, 2007). HFC-245fa is not a VOC as defined under Clean Air Act regulations (see 40 CFR 51.100(s)) addressing the development of SIPs to attain and maintain the national ambient air quality standards.

*Flammability information:* HFC-365mfc is mildly flammable with a flashpoint below -27 °C, while HFC-245fa is non-flammable. Blends of HFC-365mfc and HFC-245fa containing at least 5% HFC-245fa by weight will not be flammable. Blends will require safe handling and shipping as prescribed by the Occupational Safety and Health Administration (OSHA) and the Department of Transportation (for example, using personal safety equipment and following requirements for shipping hazardous materials at 49 CFR parts 170 through 173).

*Toxicity and exposure data:* Potential health effects of this substitute include irritation of the lungs, skin or eyes or frostbite. At high concentrations, the substitute may also cause irregular heartbeat, unconsciousness, or death. The substitute could cause asphyxiation, if air is displaced by vapors in a confined space. These potential health effects are common to many foam blowing agents.

EPA anticipates that blends of HFC-365mfc and HFC-245fa will be used consistent with the recommendations specified in the manufacturer's MSDSs. The manufacturer recommends a workplace exposure limit of 1000 ppm on an 8-hour time-weighted average for HFC-365mfc. The American Industrial Hygiene Association (AIHA) recommends a workplace environmental exposure limit (WEEL) of 300 ppm on an 8-hour time-weighted average for HFC-245fa. EPA anticipates that users will be able to meet the manufacturer's recommended workplace exposure limits and the AIHA WEEL and will be able to address potential health risks by following requirements and recommendations in the MSDSs and other safety precautions common in the foam blowing industry.

*Comparison to other foam blowing agents:* Blends of HFC-365mfc and

HFC-245fa are not ozone depleting in contrast to the ozone depleting substances which they replace. (HCFC-141b has an ODP of 0.12 (WMO, 2006).) In their lack of risk for ozone depletion, blends of HFC-365mfc and HFC-245fa are comparable to other non-ozone-depleting substitutes for HCFC-141b, such as HFC-134a and HFC-245fa alone. Blends of HFC-365mfc and HFC-245fa will have average GWP ranging from 865 to 960, comparable to or lower than that of other substitutes for HCFC-141b. For example, the GWP of HFC-134a is about 1430 and the GWP of HFC-245fa alone is about 1030. The GWPs for blends of HFC-365mfc and HFC-245fa are comparable to the GWP for the ozone-depleting substance they will replace. (The GWP of HCFC-141b is 725 (WMO, 2006)). Flammability risks of the blend are low, as discussed above. The toxicity risks are low, as discussed above. Thus, we find that blends of HFC-365mfc and HFC-245fa are acceptable because they do not pose a greater overall risk to public health and the environment than the other substitutes acceptable in the end use listed above.

## II. Section 612 Program

### A. Section 612 Statutory and Regulatory Background

Section 612 of the Clean Air Act (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 (e.g., chlorofluorocarbon, halon, carbon tetrachloride, methyl chloroform, methyl bromide, and hydrobromofluorocarbon) or class II (e.g., hydrochlorofluorocarbon) substance with any substitute that the Administrator determines may present adverse effects to human health or the environment where the Administrator has identified an alternative that (1) reduces the overall risk to human health and the environment, and (2) is currently or potentially available.

#### 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 may be

found at <http://www.epa.gov/ozone/snap/lists/index.html> and the lists of unacceptable substitutes, substitutes acceptable subject to use conditions and substitutes acceptable subject to narrowed use limits may be found at 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.

7. EPA's Regulations Implementing Section 612

On March 18, 1994, EPA published the original rulemaking (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. 40 CFR part 82, subpart G. These sectors include: refrigeration and air conditioning; foam blowing; solvents cleaning; fire suppression and explosion protection; sterilants; aerosols; adhesives, coatings and inks; and tobacco expansion. These sectors comprise the principal industrial sectors that historically consumed the largest volumes of ODS.

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

B. Regulatory History

On March 18, 1994, EPA published the final rulemaking (59 FR 13044) that described the process for administering the SNAP program and issued our first acceptability lists for substitutes in the major industrial use sectors. These sectors include:

- Refrigeration and air conditioning;
- Foam blowing;
- Solvents cleaning;
- Fire suppression and explosion protection;
- Sterilants;
- Aerosols;
- Adhesives, coatings and inks; and
- Tobacco expansion.

These sectors comprise the principal industrial sectors that historically consumed the largest volumes of ozone-depleting compounds.

As described in the original rule for the SNAP program, EPA does not believe that rulemaking procedures are required to list alternatives as acceptable with no limitations. Such listings do not impose any sanction, nor

do they remove any prior license to use a substance. Therefore, by this notice we are adding substances to the list of acceptable alternatives without first requesting comment on new listings.

However, we do believe that notice-and-comment rulemaking is required to place any substance on the list of prohibited substitutes, to list a substance as acceptable only under certain conditions, to list substances as acceptable only for certain uses, or to remove a substance from the lists of prohibited or acceptable substitutes. We publish updates to these lists as separate notices of rulemaking in the **Federal Register**.

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

You can find a complete chronology of SNAP decisions and the appropriate **Federal Register** citations from the SNAP section of EPA's Ozone Depletion World Wide Web site at <http://www.epa.gov/ozone/snap/chron.html>. This information is also available from the Air Docket (see **ADDRESSES** section above for contact information).

**List of Subjects in 40 CFR Part 82**

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

Dated: September 11, 2009.

**Jackie Krieger,**  
Acting Director, Office of Atmospheric Programs.

**Note:** The following appendix will not appear in the Code of Federal Regulations.

APPENDIX A—SUMMARY OF ACCEPTABLE DECISIONS

End-use	Substitute	Decision	Further information
<b>Refrigeration and Air Conditioning</b>			
Retail food refrigeration (new)	R-744 (CO <sub>2</sub> ) as a substitute for CFC-12, R-502, HCFC-22, and blends containing HCFC-22.	Acceptable ...	Observe recommendations in the equipment manufacturers' guidance manual and MSDSs and follow the guidelines of ASHRAE 15.

APPENDIX A—SUMMARY OF ACCEPTABLE DECISIONS—Continued

End-use	Substitute	Decision	Further information
Cold storage warehouses (new).	R-744 (CO <sub>2</sub> ) as a substitute for CFC-12, R-502, HCFC-22, and blends containing HCFC-22.	Acceptable ...	Observe recommendations in the equipment manufacturers' guidance manual and MSDSs and follow the guidelines of ASHRAE 15.
Non-mechanical heat transfer (retrofit and new).	C6-perfluoroketone as a substitute for CFC-113.	Acceptable ...	Observe recommendations in the equipment manufacturer's guidance and MSDS. The manufacturer recommends an acceptable exposure limit of 150 ppm on an 8-hr time-weighted average.
<b>Foam Blowing</b>			
Rigid Polyurethane Appliance Foam.	HFO-1234ze as a substitute for CFCs and HCFCs.	Acceptable ...	HFO-1234ze is non-flammable and has a 100-year global warming potential of 6. Its CAS Reg. No. is 29118-24-9. EPA recommends a preliminary acceptable exposure limit of 375 ppm on an 8-hr time-weighted average. Use of HFO-1234ze must be in accord with EPA's final decision under the Toxic Substances Control Act (TSCA).
	HFC-365mfc as a substitute for HCFC-141b.	Acceptable ...	HFC-365mfc is mildly flammable and has a 100-year global warming potential of 794. Observe recommendations in the manufacturer's MSDS and guidance for using this compound, particularly to address its potential flammability. Follow safe handling and shipping as prescribed by the Occupational Safety and Health Administration (OSHA) and the Department of Transportation (DOT) (for example, using personal safety equipment and following requirements for shipping hazardous materials at 49 CFR parts 170 through 173). Its CAS Reg. No. is 405-58-6.
Rigid Polyurethane Commercial Refrigeration and Sandwich Panels.	Formacel® TI as a substitute for HCFC-22 and HCFC-142b.	Acceptable ...	Observe recommendations in the manufacturer's MSDS and guidance for using these blends.
	HFC-365mfc as a substitute for HCFC-141b.	Acceptable ...	HFC-365mfc is mildly flammable and has a 100-year global warming potential of 794. Observe recommendations in the manufacturer's MSDS and guidance for using this compound, particularly to address its potential flammability. Follow safe handling and shipping as prescribed by OSHA and DOT (for example, using personal safety equipment and following requirements for shipping hazardous materials at 49 CFR parts 170 through 173).
Rigid Polyurethane Spray, Commercial Refrigeration, and Sandwich Panels.	HFO-1234ze as a substitute for CFCs and HCFCs.	Acceptable ...	HFO-1234ze is non-flammable and has a 100-year global warming potential of 6. Its CAS Reg. No. is 29118-24-9. EPA recommends a preliminary acceptable exposure limit of 375 ppm on an 8-hr time-weighted average. Use of HFO-1234ze must be in accord with EPA's final decision under TSCA.
	Blends of HFC-365mfc and HFC-245fa (at least 5% HFC-245fa by weight) as substitutes for HCFC-141b.	Acceptable ...	Blends of HFC-365mfc and HFC-245fa containing at least 5% HFC-245fa by weight are non-flammable. Typical blends contain 30 to 70% HFC-245fa and 70 to 30% HFC-365mfc. Observe recommendations in the manufacturer's MSDS and guidance for using these blends.
	Formacel® TI as a substitute for HCFC-22 and HCFC-142b.	Acceptable ...	Observe recommendations in the manufacturer's MSDS and guidance for using these blends.
Flexible Polyurethane .....	HFC-365mfc as a substitute for HCFC-141b.	Acceptable ...	HFC-365mfc is mildly flammable and has a 100-year global warming potential of 794. Observe recommendations in the manufacturer's MSDS and guidance for using this compound, particularly to address its potential flammability. Follow safe handling and shipping as prescribed by OSHA and DOT (for example, using personal safety equipment and following requirements for shipping hazardous materials at 49 CFR parts 170 through 173). Its CAS Reg. No. is 405-58-6.

APPENDIX A—SUMMARY OF ACCEPTABLE DECISIONS—Continued

End-use	Substitute	Decision	Further information
Integral Skin Polyurethane ....	HFC-365mfc as a substitute for HCFC-141b.	Acceptable ...	HFC-365mfc is mildly flammable and has a 100-year global warming potential of 794. Observe recommendations in the manufacturer's MSDS and guidance for using this compound, particularly to address its potential flammability. Follow safe handling and shipping as prescribed by OSHA and DOT (for example, using personal safety equipment and following requirements for shipping hazardous materials at 49 CFR parts 170 through 173). Its CAS Reg. No. is 405-58-6.
Polystyrene Extruded Sheet ..	Formacel® TI as a substitute for HCFC-22 and HCFC-142b.	Acceptable ...	Observe recommendations in the manufacturer's MSDS and guidance for using these blends.
	HFC-365mfc as a substitute for HCFC-141b.	Acceptable ...	HFC-365mfc is mildly flammable and has a 100-year global warming potential of 794. Observe recommendations in the manufacturer's MSDS and guidance for using this compound, particularly to address its potential flammability. Follow safe handling and shipping as prescribed by OSHA and DOT (for example, using personal safety equipment and following requirements for shipping hazardous materials at 49 CFR parts 170 through 173). Its CAS Reg. No. is 405-58-6.
Polyolefin .....	Formacel® TI as a substitute for HCFC-22 and HCFC-142b.	Acceptable ...	Observe recommendations in the manufacturer's MSDS and guidance for using these blends.
	HFC-365mfc as a substitute for HCFC-141b.	Acceptable ...	HFC-365mfc is mildly flammable and has a 100-year global warming potential of 794. Observe recommendations in the manufacturer's MSDS and guidance for using this compound, particularly to address its potential flammability. Follow safe handling and shipping as prescribed by OSHA and DOT (for example, using personal safety equipment and following requirements for shipping hazardous materials at 49 CFR parts 170 through 173). Its CAS Reg. No. is 405-58-6.
Rigid Polyurethane Slabstock and Other.	Formacel® TI as a substitute for HCFC-22 and HCFC-142b.	Acceptable ...	Observe recommendations in the manufacturer's MSDS and guidance for using these blends.
	HFC-365mfc as a substitute for HCFC-141b.	Acceptable ...	HFC-365mfc is mildly flammable and has a 100-year global warming potential of 794. Observe recommendations in the manufacturer's MSDS and guidance for using this compound, particularly to address its potential flammability. Follow safe handling and shipping as prescribed by OSHA and DOT (for example, using personal safety equipment and following requirements for shipping hazardous materials at 49 CFR parts 170 through 173). Its CAS Reg. No. is 405-58-6.
Polystyrene, Extruded Boardstock & Billet.	Formacel® TI as a substitute for HCFC-22 and HCFC-142b.	Acceptable ...	Observe recommendations in the manufacturer's MSDS and guidance for using these blends.
	HFO-1234ze as a substitute for CFCs and HCFCs.	Acceptable ...	HFO-1234ze is non-flammable and has a 100-year global warming potential of 6. Its CAS Reg. No. is 29118-24-9. EPA recommends a preliminary acceptable exposure limit of 375 ppm on an 8-hr time-weighted average. Use of HFO-1234ze must be in accord with EPA's final decision under TSCA.
	HFC-365mfc as a substitute for HCFC-141b.	Acceptable ...	HFC-365mfc is mildly flammable and has a 100-year global warming potential of 794. Observe recommendations in the manufacturer's MSDS and guidance for using this compound, particularly to address its potential flammability. Follow safe handling and shipping as prescribed by OSHA and DOT (for example, using personal safety equipment and following requirements for shipping hazardous materials at 49 CFR parts 170 through 173). Its CAS Reg. No. is 405-58-6.
	Formacel® TI as a substitute for HCFC-22 and HCFC-142b.	Acceptable ...	Observe recommendations in the manufacturer's MSDS and guidance for using these blends.



APPENDIX A—SUMMARY OF ACCEPTABLE DECISIONS—Continued

End-use	Substitute	Decision	Further information
Rigid Polyurethane & Polyisocyanurate Laminated Boardstock.	HFC-365mfc as a substitute for HCFC-141b.	Acceptable ...	HFC-365mfc is mildly flammable and has a 100-year global warming potential of 794. Observe recommendations in the manufacturer's MSDS and guidance for using this compound, particularly to address its potential flammability. Follow safe handling and shipping as prescribed by OSHA and DOT (for example, using personal safety equipment and following requirements for shipping hazardous materials at 49 CFR parts 170 through 173). Its CAS Reg. No. is 405-58-6.
Phenolic Insulation Board & Bunstock.	Formacel® TI as a substitute for HCFC-22 and HCFC-142b.	Acceptable ...	Observe recommendations in the manufacturer's MSDS and guidance for using these blends.
	HFC-365mfc as a substitute for HCFC-141b.	Acceptable ...	HFC-365mfc is mildly flammable and has a 100-year global warming potential of 794. Observe recommendations in the manufacturer's MSDS and guidance for using this compound, particularly to address its potential flammability. Follow safe handling and shipping as prescribed by OSHA and DOT (for example, using personal safety equipment and following requirements for shipping hazardous materials at 49 CFR parts 170 through 173). Its CAS Reg. No. is 405-58-6.

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**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 180**

[EPA-HQ-OPP-2008-0814; FRL-8436-5]

**Thiamethoxam; Pesticide Tolerances**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** This regulation establishes tolerances for combined residues of thiamethoxam (3-[(2-chloro-5-thiazolyl)methyl]tetrahydro-5-methyl-N-nitro-4H-1,3,5-oxadiazin-4-imine) and its metabolite CGA-322704, [N-(2-chloro-thiazol-5-ylmethyl)-N'-methyl-N'-nitro-guanidine, calculated as the stoichiometric equivalent of thiamethoxam, in or on: avocado; berry, low growing, subgroup 13-07G, except cranberry; black sapote; bushberry subgroup 13-07B, except lingonberry and blueberry, lowbush; caneberry subgroup 13-07A; canistel; fruit, small, vine climbing, subgroup 13-07F, except fuzzy kiwifruit; mamey sapote; mango; papaya; rice, grain; sapodilla; star apple; and vegetable, root, subgroup 1A. Interregional Research Project Number 4 (IR-4) and Syngenta Crop Protection, Inc., requested these tolerances under the Federal Food, Drug, and Cosmetic Act (FFDCA). In addition, this regulation amends existing tolerances for combined residues of thiamethoxam and its metabolite CGA-322704 in or on: cattle, meat byproducts; goat, meat byproducts; horse, meat byproducts;

and sheep, meat byproducts. Syngenta Crop Protection, Inc., requested these amended tolerances under FFDCA.

**DATES:** This regulation is effective September 30, 2009. Objections and requests for hearings must be received on or before November 30, 2009, and must be filed in accordance with the instructions provided in 40 CFR part 178 (see also Unit I.C. of the **SUPPLEMENTARY INFORMATION**).

**ADDRESSES:** EPA has established a docket for this action under docket identification (ID) number EPA-HQ-OPP-2008-0814. All documents in the docket are listed in the docket index available at <http://www.regulations.gov>. Although listed in the index, some information is not publicly available, e.g., Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available in the electronic docket at <http://www.regulations.gov>, or, if only available in hard copy, at the OPP Regulatory Public Docket in Rm. S-4400, One Potomac Yard (South Bldg.), 2777 S. Crystal Dr., Arlington, VA. The Docket Facility is open from 8:30 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The Docket Facility telephone number is (703) 305-5805.

**FOR FURTHER INFORMATION CONTACT:** Julie Chao, Registration Division (7505P), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460-0001; telephone number:

(703) 308-8735; e-mail address: [chao.julie@epa.gov](mailto:chao.julie@epa.gov).

**SUPPLEMENTARY INFORMATION:**

**I. General Information**

*A. Does this Action Apply to Me?*

You may be potentially affected by this action if you are an agricultural producer, food manufacturer, or pesticide manufacturer. Potentially affected entities may include, but are not limited to those engaged in the following activities:

- Crop production (NAICS code 111).
- Animal production (NAICS code 112).
- Food manufacturing (NAICS code 311).
- Pesticide manufacturing (NAICS code 32532).

This listing is not intended to be exhaustive, but rather to provide a guide for readers regarding entities likely to be affected by this action. Other types of entities not listed in this unit could also be affected. The North American Industrial Classification System (NAICS) codes have been provided to assist you and others in determining whether this action might apply to certain entities. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed under **FOR FURTHER INFORMATION CONTACT**.

*B. How Can I Access Electronic Copies of this Document?*

In addition to accessing electronically available documents at <http://www.regulations.gov>, you may access this **Federal Register** document electronically through the EPA Internet under the "**Federal Register**" listings at