

This safety zone will prohibit entry into certain navigable waters in the path of these launches near Cape Canaveral, FL. It is categorically excluded from further review under paragraph L60(a) of Appendix A, Table 1 of DHS Instruction Manual 023-01-001-01, Rev. 1. A Record of Environmental Consideration supporting this determination is available in the docket. For instructions on locating the docket, see the **ADDRESSES** section of this preamble.

G. Protest Activities

The Coast Guard respects the First Amendment rights of protesters. Protesters are asked to call or email the person listed in the **FOR FURTHER INFORMATION CONTACT** section to coordinate protest activities so that your message can be received without jeopardizing the safety or security of people, places or vessels.

List of Subjects in 33 CFR Part 165

Harbors, Marine safety, Navigation (water), Reporting and recordkeeping requirements, Security measures, Waterways.

For the reasons discussed in the preamble, the Coast Guard amends 33 CFR part 165 as follows:

PART 165—REGULATED NAVIGATION AREAS AND LIMITED ACCESS AREAS

■ 1. The authority citation for part 165 continues to read as follows:

Authority: 46 U.S.C. 70034, 70051; 33 CFR 1.05-1, 6.04-1, 6.04-6, and 160.5; Department of Homeland Security Delegation No. 00170.1, Revision No. 01.2.

■ 2. Add § 165.T07-0450 to read as follows:

§ 165.T07-0450 Safety Zone; Atlantic Ocean, Cape Canaveral, FL.

(a) *Location.* The following area is a safety zone: All waters of the Atlantic Ocean, from surface to bottom, encompassed by a line connecting the following points beginning at Point 1: 28°36'51.88" N 80°35'57.33" W, thence to Point 2: 28°34'0.00" 80°25'0.00" W, thence to Point 3: 28°14'0.00" 80°13'0.00" W, thence to Point 4: 28°12'0.00" N 80°23'0.00" W, thence to Point 5: 28°16'0.00" N, 80°26'00.00" W, thence to point 6: 28°26'31.81" N, 80°33'8.02" W. These coordinates are based on WGS 84.

(b) *Definitions.* As used in this section, *designated representative* means a Coast Guard Patrol Commander, including a Coast Guard coxswain, petty officer, or other officer operating a Coast Guard vessel, and U.S. Air Force range safety personnel, and a Federal, State, and local officer

designated by or assisting the Captain of the Port Jacksonville (COTP) in the enforcement of the safety zone.

(c) *Regulations.* (1) Under the general safety zone regulations in subpart C of this part, you may not enter the safety zone described in paragraph (a) of this section unless authorized by the COTP or the COTP's designated representative.

(2) To seek permission to enter, transit through, anchor in, or remain within the safety zone contact the COTP Jacksonville by telephone at (904) 714-7557 or the COTP's representative via VHF-FM radio on channel 16. Those in the safety zone must comply with all lawful orders or directions given to them by the COTP or the COTP's designated representative.

(d) *Enforcement period.* This section will be enforced from January 13, 2022, through January 31, 2022, during times when a Broadcast Notice to Mariners informs mariners that space vehicles are being launched in a direction resulting in a southerly or polar orbit trajectory.

Dated: January 12, 2022.

J.D. Rose,

*Commander, U.S. Coast Guard, Acting,
Captain of the Port.*

[FR Doc. 2022-01004 Filed 1-19-22; 8:45 am]

BILLING CODE 9110-04-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 82

[EPA-HQ-OAR-2003-0118; FRL-9445-01-OAR]

RIN 2060-AG12

Protection of Stratospheric Ozone: Determination 37 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 Significant New Alternatives Policy program. This action lists as acceptable additional substitutes for use in the refrigeration and air conditioning; foam blowing; aerosols; cleaning solvents; and adhesives, coatings, and inks sectors.

DATES: This determination is applicable on January 20, 2022.

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 telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742. Out of an abundance of caution for members of the public and our staff, the EPA Docket Center and Reading Room are closed to public visitors, with limited exceptions, to reduce the risk of transmitting COVID-19. Our Docket Center staff will continue to provide remote customer service via email, phone, and webform. For further information on EPA Docket Center services and the current status, please visit us online at <https://www.epa.gov/dockets>.

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.

SUPPLEMENTARY INFORMATION:

Table of Contents

- I. Listing of New Acceptable Substitutes
 - A. Refrigeration and Air Conditioning
 - B. Foam Blowing
 - C. Aerosols
 - D. Cleaning Solvents
 - E. Adhesives, Coatings, and Inks
- Appendix A: Summary of Decisions for New Acceptable Substitutes

I. Listing of New Acceptable Substitutes

This action is listing as acceptable additional substitutes for use in the refrigeration and air conditioning; foam blowing; aerosols; cleaning solvents; and adhesives, coatings and inks sectors. This action presents EPA's most recent decision under the Significant New Alternatives Policy (SNAP) program to list as acceptable several substitutes in different end-uses. New substitutes are:

- Hydrochlorofluoroolefin (HCFO)-1233zd(E) in cold storage warehouses,

ice skating rinks and industrial process air conditioning (new equipment only);

- Blends of 10 to 90 percent hydrofluoroolefin (HFO)–1234ze(E) by weight and the remainder HCFO–1233zd(E) in polystyrene: Extruded boardstock and billet (XPS);
- Blends of 10 to 90 percent HFO–1234ze(E) by weight and the remainder hydrofluorocarbon (HFC)–152a in XPS;
- Blends of zero to 100 percent HFO–1234ze(E), zero to 70 percent methyl formate, zero to 60 percent HFC–152a, zero to 60 percent carbon dioxide (CO₂), and zero to 60 percent water in XPS; and
- HCFO–1233yd(Z) in electronics cleaning, metals cleaning, precision cleaning, aerosol solvents, and coatings.

EPA's review of certain substitutes listed in this document is pending for other end-uses. Listing decisions in the end-uses in this document do not prejudice EPA's listings of these substitutes for other end-uses. While certain substitutes being added through this action to the acceptable lists for specific end-uses may have a higher risk in one or more SNAP criteria than certain other substitutes already listed as acceptable or acceptable subject to restrictions, they have a similar or lower overall risk than other acceptable substitutes in those end-uses.

For additional information on SNAP, visit the SNAP portion of EPA's Ozone Layer Protection website at:

www.epa.gov/snap. Copies of the full lists of acceptable substitutes for ozone-depleting substances (ODS) in the industrial sectors covered by the SNAP program are available at www.epa.gov/snap/substitutes-sector. 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), and the regulations 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. 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 each listing decision in this action. The statements in the "Further Information" column in the tables provide additional information but these are not legally binding under section 612 of the Clean Air Act (CAA). Although you are not required to follow recommendations in

the "Further Information" column of the table under 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. The identification of other enforceable or binding requirements should not be construed as a comprehensive list of such obligations. In many instances, the information simply refers to standard operating practices in existing industry standards and/or building codes. When using these substitutes in the identified end-use, EPA strongly encourages you to apply the information in the "Further Information" 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. HCFO–1233zd(E)

EPA's decision: EPA finds HCFO–1233zd(E) acceptable as a substitute for use in:

- Cold storage warehouses (new equipment only)
- Ice skating rinks (new equipment only)
- Industrial process air conditioning (new equipment only)

HCFO–1233zd(E), marketed under the trade name Solstice®zd, is also known as *trans*-1-chloro-3,3,3-trifluoroprop-1-ene (Chemical Abstracts Service Registry Number [CAS Reg. No.] 102687–65–0).

You may find a copy of the applicant's submission, with CBI redacted, providing the required health and environmental information for this substitute in this end-use in Docket EPA–HQ–OAR–2003–0118 at www.regulations.gov under the name, "Supporting Materials for Notice 37 Listing of HCFO–1233zd(E) in Refrigeration and Air Conditioning. SNAP Submission Received October 7, 2019." EPA performed an assessment to examine the health and environmental risks of this substitute. These assessments are available in Docket EPA–HQ–OAR–2003–0118:

- "Risk Screen on Substitutes in Cold Storage Warehouses and Industrial Process Air Conditioning. Substitute: HCFO–1233zd(E)."
- "Risk Screen on Substitutes in Ice Skating Rinks. Substitute: HCFO–1233zd(E)."

EPA previously listed HCFO–1233zd(E) as acceptable for use in several refrigeration and air conditioning and foam blowing end-uses (December 11, 2020, 85 FR 79863; August 10, 2012, 77 FR 47768; October 21, 2014, 79 FR 62863).

Environmental information: HCFO–1233zd(E) has an ozone depletion potential (ODP) of less than 0.0004 and a global warming potential (GWP) of 3.7.¹ HCFO–1233zd(E) 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 blend is limited by the venting prohibition under section 608(c)(2) of the CAA, codified in EPA's regulations at 40 CFR 82.154(a).

Flammability information: HCFO–1233zd(E) 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. 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 Workplace Environmental Exposure Limit (WEEL) Committee of the Occupational Alliance for Risk Science (OARS) has established a WEEL of 800 ppm on an eight-hour time-weighted average (8-hr TWA) for HCFO–1233zd(E). EPA anticipates that users will be able to meet the WEEL and address potential health risks by following requirements and recommendations in the manufacturer's safety data sheet (SDS), American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 15, and other safety precautions common to the refrigeration and air conditioning industry.

Comparison to other substitutes in these end-uses: HCFO–1233zd(E) has an ODP of less than 0.0004, comparable to or less than other listed substitutes in these end-uses with ODPs ranging from zero to 0.098.

For cold storage warehouses, HCFO–1233zd(E)'s GWP of about 3.7 is comparable to or lower than that of

¹ WMO (World Meteorological Organization), *Scientific Assessment of Ozone Depletion: 2018*, Global Ozone Research and Monitoring Project—Report No. 58, 588 pp., Geneva, Switzerland, 2018. Available at: <https://ozone.unep.org/sites/default/files/2019-05/SAP-2018-Assessment-report.pdf>. In this action, the 100-year GWP values are used.

other acceptable substitutes for new equipment such as ammonia absorption, CO₂, R-450A, R-513A, and R-407C, with GWPs² ranging from zero to 1,770.

For ice skating rinks and industrial process air conditioning, HCFO–1233zd(E)'s GWP of about 3.7 is comparable to or lower than that of other acceptable substitutes for new equipment such as ammonia absorption, CO₂, R-450A, R-513A, and R-507A, with GWPs ranging from zero 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-uses. Toxicity risks can be minimized by use consistent with the OARS WEEL, 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 HCFO–1233zd(E) acceptable in the cold storage warehouses (new equipment only), ice skating rinks (new equipment only) and industrial process air conditioning (new equipment only) end-uses because it does not pose greater overall environmental and human health risk than other available substitutes in the same end-uses.

B. Foam Blowing

1. Blends of 10 to 90 Percent HFO–1234ze(E) by Weight and the Remainder HCFO–1233zd(E)

EPA's decision: EPA finds blends of 10 to 90 percent HFO–1234ze(E) by weight and the remainder HCFO–1233zd(E) acceptable as a substitute for use as a blowing agent in:

- *Polystyrene:* Extruded boardstock and billet

These blends range in composition from 10 percent HFO–1234ze(E) and 90 percent HCFO–1233zd(E) to 90 percent HFO–1234ze(E) and 10 percent HCFO–1233zd(E). Accordingly, these blends are referred to as blends of 10 to 90 percent by weight HFO–1234ze(E) and the remainder HCFO–1233zd(E), or

hereafter in this action as “HFO–1234ze(E)/HCFO–1233zd(E) co-blowing blends”; they also go by the trade name of Solstice® XBA–1. HFO–1234ze(E) is also called 1,3,3,3-tetrafluoropropene (E), or *trans*-1,3,3,3-tetrafluoropropene (CAS Reg. No. 29118–24–9). HCFO–1233zd(E) is also called *trans*-1-chloro-3,3,3-trifluoro-prop-1-ene (CAS Reg. No. 102687–65–0).

You may find a copy of the applicant's submission, with CBI redacted, providing the required health and environmental information for this substitute in this end-use in Docket EPA–HQ–OAR–2003–0118 at www.regulations.gov under the name, “Supporting Materials for Notice 37 Listing Blends of 10 to 90 Percent HFO–1234ze(E) by Weight and the Remainder HCFO–1233zd(E) as a Foam Blowing Agent. SNAP Submission Received November 4, 2019.” 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 name “Risk Screen on Substitutes in Extruded Polystyrene Boardstock and Billet Foam Substitute: Blends of 10 to 90 Percent HFO–1234ze(E) by Weight and the Remainder HCFO–1233zd(E) (Solstice® XBA–1).”

Environmental information: HFO–1234ze(E) has an ODP of zero and HCFO–1233zd(E) has an ODP of less than 0.0004.³ If these values are weighted by mass percentage, then these HFO–1234ze(E)/HCFO–1233zd(E) co-blowing blends have an ODP ranging from less than 0.0004 to less than 0.00004. Their components, HFO–1234ze(E) and HCFO–1233zd(E), have GWPs of less than one⁴ and 3.7, respectively. If these values are weighted by mass percentage, then the blends range in GWP from about 1.3 to about 3.4. Both components of the blends 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.

Flammability information: The component HCFO–1233zd(E) is non-flammable. HFO–1234ze(E) is not flammable at standard temperature and pressure using the standard test method American Society for Testing and Materials (ASTM) E681. However, at higher temperatures, such as the

temperatures typical for extruding XPS, HFO–1234ze(E) may also be flammable, particularly at higher humidity levels.⁵

Toxicity and exposure data: Potential health effects of these substitutes at lower concentrations include drowsiness and dizziness. Potential health effects also include skin or eye irritation or frostbite. The components of HFO–1234ze(E)/HCFO–1233zd(E) co-blowing blends can cause symptoms of asphyxiation when present at sufficiently high concentrations. Excessive inhalation of the substitute may also result in an irregular heartbeat, due to cardiac effects. These potential health effects are common to many foam blowing agents.

The American Industrial Hygiene Association (AIHA) has established a WEEL of 800 ppm as an 8-hr TWA for HFO–1234ze(E), and OARS's WEEL committee has established a WEEL of 800 ppm for HCFO–1233zd(E). EPA anticipates that users will be able to meet the AIHA and OARS WEELs and address potential health risks by following requirements and recommendations in the manufacturer's SDSs and other safety precautions common to the foam blowing industry.

Comparison to other substitutes in this end-use: These HFO–1234ze(E)/HCFO–1233zd(E) co-blowing blends have an ODP ranging from less than 0.0004 to less than 0.00004, comparable to all other acceptable substitutes in this end-use, such as blends of 10 to 99 percent by weight HFO–1336mzz(Z) and the remainder HFC–152a (hereafter in this action “HFO–1336mzz(Z)/HFC–152a blends”), HFO–1234ze(E), methyl formate, and CO₂. These HFO–1234ze(E)/HCFO–1233zd(E) blends' GWPs from about 1.3 to 3.4 are lower than or comparable to those of other acceptable substitutes in the same end-use for which we are finding it acceptable, such as HFO–1336mzz(Z)/HFC–152a blends, HFO–1234ze(E), light saturated hydrocarbons C3–C6⁶ and methyl formate, with respective GWPs

² Unless otherwise stated, all GWPs in this document for individual chemicals 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. For blends of chemicals, such as R-507A, this document weights the GWPs of each component of the blend by their mass percentage in the blend, based upon the 100-year GWPs in IPCC, 2007, if available in that document.

³ WMO (World Meteorological Organization), *Scientific Assessment of Ozone Depletion: 2018*, Global Ozone Research and Monitoring Project—Report No. 58, 588 pp., Geneva, Switzerland, 2018. Available at: <https://ozone.unep.org/sites/default/files/2019-05/SAP-2018-Assessment-report.pdf>. (WMO, 2018)

⁴ WMO, 2018.

⁵ Bellair and Hood, 2019. Comprehensive evaluation of the flammability and ignitability of HFO–1234ze, R.J. Bellair and L. Hood, *Process Safety and Environmental Protection* 132 (2019) 273–284. Available online at doi.org/10.1016/j.psep.2019.09.033.

⁶ That is, alkanes with three to six carbons such as butane, n-pentane, isopentane, and cyclopentane.

of approximately three to 110,⁷ 124, one,⁸ less than one,⁹ and 11.¹⁰

Flammability and toxicity risks are comparable to or lower than flammability and toxicity risks of other available substitutes in the same end-use. Some acceptable substitutes in this end-use are flammable, like HFC-152a, light saturated hydrocarbons C3-C6, and methyl formate, while others are non-flammable. Toxicity risks can be minimized by use consistent with the AIHA's and OARS's WEELs, recommendations in the SDS, and other safety precautions common in the foam blowing industry.

EPA finds blends of 10 to 90 percent by weight HFO-1234ze(E) and the remainder HCFO-1233zd(E) acceptable in the XPS end-use because they do not pose greater overall environmental and human health risk than other available substitutes in the same end-use.

2. Blends of 10 to 90 Percent HFO-1234ze(E) by Weight and the Remainder HFC-152a

EPA's decision: EPA finds blends of 10 to 90 percent HFO-1234ze(E) by weight and the remainder HFC-152a acceptable as a substitute for use as a blowing agent in:

- *Polystyrene:* Extruded boardstock and billet

These blends range in composition from 10 percent HFO-1234ze(E) and 90 percent HFC-152a to 90 percent HFO-1234ze(E) and 10 percent HFC-152a. Accordingly, these blends are also referred to as blends of 10 to 90 percent by weight HFO-1234ze(E) and the remainder HFC-152a, or hereafter in this action as "HFO-1234ze(E)/HFC-152a co-blowing blends"; they also go by the trade name of Solstice® XBA-2. HFO-1234ze(E) is also called 1,3,3,3-tetrafluoropropene (E), or *trans*-1,3,3,3-tetrafluoropropene (CAS Reg. No. 29118-24-9). HFC-152a is also called 1,1-difluoroethane (CAS Reg. No. 75-37-6).

You may find a copy of the applicant's submission, with CBI redacted, providing the required health and environmental information for this substitute in this end-use in Docket EPA-HQ-OAR-2003-0118 at

www.regulations.gov under the name, "Supporting Materials for Notice 37 Listing Blends of 10 to 90 Percent HFO-1234ze(E) by Weight and the Remainder HFC-152a as a Foam Blowing Agent. SNAP Submission Received November 4, 2019." 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 name "Risk Screen on Substitutes in Extruded Polystyrene Boardstock and Billet Foam Substitute: Blends of 10 to 90 Percent HFO-1234ze(E) by Weight and the Remainder HFC-152a (Solstice® XBA-2)."

Environmental information: These HFO-1234ze(E)/HFC-152a co-blowing blends and their components have an ODP of zero. Their components, HFO-1234ze(E) and HFC-152a, have GWPs of less than one¹¹ and 124, respectively. If these values are weighted by mass percentage, then the blends range in GWP from about 13 to about 112. Both components of the blends 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.

Flammability information: The component HFC-152a is flammable while the component HFO-1234ze(E) is not flammable at standard temperature and pressure using the standard test method ASTM E681. However, at higher temperatures, such as the temperatures typical for extruding XPS, HFO-1234ze(E) may also be flammable, particularly at higher humidity levels.¹²

Toxicity and exposure data: Potential health effects of these substitutes at lower concentrations include drowsiness and dizziness. Potential health effects also include skin or eye irritation or frostbite. The components of HFO-1234ze(E)/HFC-152a blends can cause symptoms of asphyxiation when present at sufficiently high concentrations. Excessive inhalation of the substitute may also result in an irregular heartbeat, due to cardiac effects. These potential health effects are common to many foam blowing agents.

The AIHA has established WEELs of 1,000 ppm for HFC-152a, and of 800 ppm for HFO-1234ze(E), both as an 8-

hr TWA. 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 SDSs and other safety precautions common to the foam blowing industry.

Comparison to other substitutes in this end-use: These HFO-1234ze(E)/HFC-152a co-blowing blends have an ODP of zero, comparable to all other acceptable substitutes in this end-use, such as HFO-1336mzz(Z)/HFC-152a blends, HFC-152a, HFO-1234ze(E), methyl formate, and CO₂. These HFO-1234ze(E)/HFC-152a co-blowing blends' GWPs from about 13 to 112 are lower than or comparable to those of other acceptable substitutes in the same end-use for which we are finding them acceptable, such as HFO-1336mzz(Z)/HFC-152a blends and HFC-152a with respective GWPs of approximately three to 110¹³ and 124. The GWPs of the HFO-1234ze(E)/HFC-152a co-blowing blends of about 13 to 112 are higher than those for acceptable alternatives such as HFO-1234ze(E), light saturated hydrocarbons C3-C6 and methyl formate, with respective GWPs of one,¹⁴ less than one,¹⁵ and 11.¹⁶ Based on current information, EPA anticipates that HFO-1234ze(E), light saturated hydrocarbons C3-C6 and methyl formate are not currently being used as the sole blowing agent by any U.S. manufacturers in this end-use because the individual chemicals have drawbacks such as insufficient vapor pressure, insufficient solubility in the polystyrene matrix, or high permeability resulting in low thermal resistance ("R-value"); blends such as these HFO-1234ze(E)/HFC-152a co-blowing blends are expected to result in a feasible balance of blowing agent properties for adequate or better performance.

Flammability and toxicity risks are comparable to or lower than flammability and toxicity risks of other available substitutes in the same end-use. Some acceptable substitutes in this end-use are flammable, like HFC-152a, light saturated hydrocarbons C3-C6, and methyl formate, while others are non-flammable. Toxicity risks can be minimized by use consistent with the

⁷ HFO-1336mzz(Z) and HFC-152a have GWPs of about two (WMO, 2018) and 124 (IPCC, 2007), respectively. If these values are weighted by mass percentage, then the blends range in GWP from about three to about 110.

⁸ WMO (World Meteorological Organization), *Scientific Assessment of Ozone Depletion: 2018*, Global Ozone Research and Monitoring Project—Report No. 58, 588 pp., Geneva, Switzerland, 2018. Available at: <https://ozone.unep.org/sites/default/files/2019-05/SAP-2018-Assessment-report.pdf>.

⁹ Ibid.

¹⁰ Ibid.

¹¹ WMO (World Meteorological Organization), *Scientific Assessment of Ozone Depletion: 2018*, Global Ozone Research and Monitoring Project—Report No. 58, 588 pp., Geneva, Switzerland, 2018. Available at: <https://ozone.unep.org/sites/default/files/2019-05/SAP-2018-Assessment-report.pdf>.

¹² Bellair and Hood, 2019. Comprehensive evaluation of the flammability and ignitability of HFO-1234ze, R.J. Bellair and L. Hood, *Process Safety and Environmental Protection* 132 (2019) 273–284. Available online at doi.org/10.1016/j.psep.2019.09.033.

¹³ HFO-1336mzz(Z) and HFC-152a have GWPs of about two (WMO, 2018) and 124 (IPCC, 2007), respectively. If these values are weighted by mass percentage, then the blends range in GWP from about three to about 110.

¹⁴ WMO (World Meteorological Organization), *Scientific Assessment of Ozone Depletion: 2018*, Global Ozone Research and Monitoring Project—Report No. 58, 588 pp., Geneva, Switzerland, 2018. Available at: <https://ozone.unep.org/sites/default/files/2019-05/SAP-2018-Assessment-report.pdf>.

¹⁵ Ibid.

¹⁶ Ibid.

AIHA's WEELs, recommendations in the SDS, and other safety precautions common in the foam blowing industry.

EPA finds blends of 10 to 90 percent by weight HFO-1234ze(E) and the remainder HFC-152a acceptable in the XPS end-use because they do not pose greater overall environmental and human health risk than other available substitutes in the same end-use.

3. Blends of Zero to 100 Percent HFO-1234ze(E), Zero to 70 Percent Methyl Formate, Zero to 60 Percent HFC-152a, Zero to 60 Percent CO₂ and Zero to 60 Percent Water

EPA's decision: EPA finds blends of zero to 100 percent HFO-1234ze(E), zero to 70 percent methyl formate, zero to 60 percent HFC-152a, zero to 60 percent CO₂ and zero to 60 percent water acceptable as a substitute for use as a blowing agent in:

- *Polystyrene:* Extruded boardstock and billet

These blends are hereafter referred to as "HFO-1234ze(E)/methyl formate/HFC-152a/CO₂/water co-blowing blends." The components of the blends are co-blown and component percentages are by weight.

HFO-1234ze(E) is also known as HFC-1234ze, HFO-1234ze or *trans*-1,3,3,3-tetrafluoroprop-1-ene (CAS Reg. No. 29118-24-9). Methyl formate is also known as methyl methanoate or formic acid, methyl ester (CAS Reg. No. 107-31-3). HFC-152a, also known as 1,1-difluoroethane, has CAS Reg. No. 75-37-6. CO₂ has CAS Reg. No. 124-38-9, and water has CAS Reg. No. 7732-18-5.

You may find a copy of the applicant's submission, with CBI redacted, providing the required health and environmental information for this substitute in this end-use in Docket EPA-HQ-OAR-2003-0118 at www.regulations.gov under the name, "Supporting Materials for Notice 37 Listing Blends of 0-100% HFO-1234ze(E), 0-70% Methyl Formate, 0-60% HFC-152a, 0-60% CO₂ and 0-60% Water as a Foam Blowing Agent. SNAP Submission Received January 26, 2021." 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 name "Risk Screen on Substitutes in Extruded Polystyrene Boardstock and Billet Foam Substitute: HFO-1234ze(E)/Methyl Formate/HFC-152a/CO₂/Water Co-blowing Blends for Extruded Polystyrene Foam Insulation (HFO-1234ze(E)/Methyl Formate/HFC-152a/CO₂/Water Co-blowing Blends)."

Environmental information: The blends have an ODP of zero. Their components, HFO-1234ze(E), methyl formate, HFC-152a, CO₂, and water have GWPs of one,¹⁷ 11,¹⁸ 124,¹⁹ one,²⁰ and less than one,²¹ respectively. If these values are weighted by mass percentage, then the blends could have a GWP ranging from one to 80. HFO-1234ze(E), methyl formate, HFC-152a, CO₂, and water—components of the blends—are excluded from EPA's regulatory definition of VOC under CAA regulations that address the development of SIPs to attain and maintain the NAAQS. See 40 CFR 51.100(s).

Flammability information: The components HFC-152a and methyl formate are flammable while the other components of the blends are non-flammable at standard temperature and pressure using the standard test method ASTM E681. However, at higher temperatures, such as the temperatures typical for extruding XPS, HFO-1234ze(E) may also be flammable, particularly at higher humidity levels.²²

Toxicity and exposure data: Potential health effects of these substitutes at lower concentrations include headache, nausea, drowsiness, and dizziness. The substitutes may also irritate the skin or eyes or cause frostbite. Excessive inhalation of the substitutes may also result in an irregular heartbeat, due to cardiac effects. At sufficiently high concentrations, they may cause central nervous system depression and affect respiration. The substitutes could cause asphyxiation if air is displaced by vapors in a confined space. These health effects are common to many foam blowing agents.

The AIHA has established WEELs of 1,000 ppm as an eight-hour time-weighted average for HFC-152a and 800 ppm for HFO-1234ze(E). Methyl formate has an Occupational Safety and

Health Administration (OSHA) permissible exposure limits (PEL) of 100 ppm on an 8-hr TWA. CO₂ has an OSHA PEL of 5,000 ppm on an 8-hr TWA, 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 anticipates that users will be able to meet the AIHA WEELs, OSHA PELs, and NIOSH STEL and address potential health risks by following requirements and recommendations in the manufacturer's SDSs and other safety precautions common to the foam blowing industry.

Comparison to other substitutes in this end-use: HFO-1234ze(E)/methyl formate/HFC-152a/CO₂/water co-blowing blends have ODPs of zero, comparable to all other acceptable substitutes in this end-use, such as HFO-1336mzz(Z)/HFC-152a blends, HFC-152a, HFO-1234ze(E), methyl formate, and CO₂.

The GWPs of the HFO-1234ze(E)/methyl formate/HFC-152a/CO₂/water co-blowing blends, ranging from approximately one to 80, are lower than HFC-152a's GWP of 124 and are comparable to or lower than those for HFO-1336mzz(Z)/HFC-152a blends (three to 110²³). The worst-case GWPs of the HFO-1234ze(E)/methyl formate/HFC-152a/CO₂/water co-blowing blends are higher than those for acceptable alternatives such as HFO-1234ze(E), light saturated hydrocarbons C3-C6 and methyl formate, with respective GWPs of less than one,²⁴ less than one,²⁵ and 11,²⁶ while the GWP at the low end of the range of approximately one is comparable to those acceptable alternatives. Based on current information, EPA anticipates that HFO-1234ze(E), light saturated hydrocarbons C3-C6 and methyl formate are not currently being used as the sole blowing agent by any U.S. manufacturers in this end-use because the individual chemicals have drawbacks such as insufficient vapor pressure, insufficient solubility in the polystyrene matrix, or high permeability resulting in low thermal resistance ("R-value"); blends such as these HFO-1234ze(E)/methyl formate/HFC-152a/CO₂/water co-blowing blends are expected to result in a feasible balance of blowing agent

¹⁷ WMO (World Meteorological Organization), *Scientific Assessment of Ozone Depletion: 2018*, Global Ozone Research and Monitoring Project—Report No. 58, 588 pp., Geneva, Switzerland, 2018. Available at: <https://ozone.unep.org/sites/default/files/2019-05/SAP-2018-Assessment-report.pdf>. In this action, the 100-year GWP values are used.

¹⁸ WMO, 2018.

¹⁹ IPCC, 2007.

²⁰ IPCC, 2007.

²¹ Sherwood et al. 2018. This paper estimated that water vapor emitted near Earth's surface due to anthropogenic sources (e.g., irrigation) would have a GWP of -10^{-3} to 5×10^{-4} . "The global warming potential of near-surface emitted water vapour," Steven C. Sherwood, Vishal Dixit and Chryséis Salomez. *Environ. Res. Lett.* 13 (2018) 104006.

²² Bellair and Hood, 2019. Comprehensive evaluation of the flammability and ignitability of HFO-1234ze, R.J. Bellair and L. Hood, *Process Safety and Environmental Protection* 132 (2019) 273-284. Available online at doi.org/10.1016/j.psep.2019.09.033.

²³ HFO-1336mzz(Z) and HFC-152a have GWPs of about two (WMO, 2018) and 124 (IPCC, 2007), respectively. If these values are weighted by mass percentage, then the blends range in GWP from about three to about 110.

²⁴ WMO, 2018.

²⁵ WMO, 2018.

²⁶ WMO, 2018.

properties for adequate or better performance.

Flammability and toxicity risks of the HFO–1234ze(E)/methyl formate/HFC–152a/CO₂/water co-blowing blends are comparable to or lower than flammability and toxicity risks of other available substitutes in the same end-use. Some acceptable substitutes in this end-use are flammable, like HFC–152a, light saturated hydrocarbons C3–C6, and methyl formate, while others are non-flammable. Toxicity risks can be minimized by use consistent with the AIHA WEELs, OSHA PELs, NIOSH STEL, recommendations in the manufacturer's SDSs, and other safety precautions common in the foam-blowing industry.

EPA finds HFO–1234ze(E)/methyl formate/HFC–152a/CO₂/water co-blowing blends acceptable in the XPS end-use because they do not pose greater overall environmental and human health risk than other available substitutes in the same end-use.

C. Aerosols

1. HCFO–1233yd(Z)

EPA's decision: EPA finds HCFO–1233yd(Z) acceptable as a substitute for use in:

- Aerosol solvents

HCFO–1233yd(Z) is also known as (Z)-1-Chloro-2,3,3-trifluoropropene (CAS Reg. No. 1263679–68–0).

You may find a copy of the applicant's submission, with CBI redacted, providing the required health and environmental information for this substitute in this end-use in Docket EPA–HQ–OAR–2003–0118 at www.regulations.gov under the name, “Supporting Materials for Notice 37 Listing of HCFO–1233yd(Z) in Cleaning Solvents, Aerosol Solvents, and Coatings. SNAP Submission Received March 12, 2019.” 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:

- “Risk Screen on Substitutes in Aerosol Solvents. Substitute: HCFO–1233yd(Z).”

Environmental information: HCFO–1233yd(Z) has an ODP of 0.00003 and a GWP of less than 1.²⁷ Under CAA regulations (see 40 CFR 51.100(s)) defining VOC for the purpose of addressing the development of SIPs to attain and maintain the NAAQS, HCFO–

1233yd(Z) would be considered a VOC. That definition provides that “any compound of carbon” which “participates in atmospheric photochemical reactions” is considered a VOC unless expressly excluded in that provision based on a determination of “negligible photochemical reactivity.” The manufacturer has petitioned EPA to exclude HCFO–1233yd(Z) from the definition of VOC under those regulations. EPA has not yet taken action on that petition. This substitute is subject to a Toxic Substance Control Act (TSCA) section 5(a)(2) Significant New Use Rule (SNUR).

Flammability information: HCFO–1233yd(Z) 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. The substitute could cause asphyxiation if air is displaced by vapors in a confined space. These potential health effects are common to many aerosol solvents.

The manufacturer recommends an acceptable exposure limit (AEL) for the workplace of 250 ppm on an 8-hr TWA for HCFO–1233yd(Z). 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 other safety precautions common to the aerosol industry.

Comparison to other substitutes in this end-use: HCFO–1233yd(Z) has an ODP of less than 0.00003, comparable to or less than other listed substitutes in this end-use with ODPs ranging from zero to 0.033.

HCFO–1233yd(Z)'s GWP of less than one is lower than that of other acceptable substitutes such as HFE–7200, HFE–347mcc3, HFC–365mfc and HFC–4310mee with GWPs ranging from 59 to 1,640. HCFO–1233yd(Z)'s GWP is lower than or comparable to the GWPs of other acceptable substitutes for aerosol solvents, including acetone, methoxytridecafluoroheptene isomers (MPHE), and *trans*-1-chloro-3,3,3-trifluoroprop-1-ene with GWPs ranging from less than one to seven.

Some acceptable substitutes in this end-use are VOC, like HCFO–1233yd(Z), while others are excluded from the definition of VOC.

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, industry standards, recommendations in the manufacturer's

SDS, and other safety precautions common in the aerosol industry.

EPA finds HCFO–1233yd(Z) acceptable in the aerosol solvent end-use because it does not pose greater overall environmental and human health risk than other available substitutes in the same end-use.

D. Cleaning Solvents

1. HCFO–1233yd(Z)

EPA's decision: EPA finds HCFO–1233yd(Z) acceptable as a substitute for use in:

- Electronics cleaning
- Metals cleaning
- Precision cleaning

HCFO–1233yd(Z) is also known as (Z)-1-chloro-2,3,3-trifluoropropene (CAS Reg. No. 1263679–68–0).

You may find a copy of the applicant's submission, with CBI redacted, providing the required health and environmental information for this substitute in this end-use in Docket EPA–HQ–OAR–2003–0118 at www.regulations.gov under the name, “Supporting Materials for Notice 37 Listing of HCFO–1233yd(Z) in Cleaning Solvents, Aerosol Solvents, and Coatings. SNAP Submission Received March 12, 2019.” 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:

- “Risk Screen on Substitutes in Electronics Cleaning, Metals Cleaning, and Precision Cleaning. Substitute: HCFO–1233yd(Z).”

Environmental information: The environmental information for this substitute is set forth in the “Environmental information” section in listing in I.C.1. above.

Flammability information: HCFO–1233yd(Z) 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.C.1. above.

Comparison to other substitutes in these end-uses: HCFO–1233yd(Z) has an ODP of less than 0.00003, comparable to or less than other listed substitutes in the metals cleaning, electronics cleaning, and precision cleaning end-uses with ODPs ranging from zero to 0.033.

HCFO–1233yd(Z)'s GWP of less than 1 is lower than that of other acceptable substitutes such as HFE–7200, HFE–7100, HFC–365mfc and HFC–4310mee with GWPs ranging from 59 to 1,640. HCFO–1233yd(Z)'s GWP is lower than or comparable to the GWPs of other acceptable substitutes for cleaning solvents, including acetone, MPHE, and

²⁷ Kazuaki Tokuhashi, Tadafumi Uchimaru, Kenji Takizawa, and Shigeo Kondo, 2018. Rate Constants for the Reactions of OH Radical with the (E)/(Z) Isomers of CF₃CF=CHCl and CHF₂CF=CHCl (*J.Phys. Chem. A* 2018, 122, 3120–3127) (Tokuhashi et al., 2018).

trans-1-chloro-3,3,3-trifluoroprop-1-ene with GWP's ranging from less than one to seven.

Some acceptable substitutes in these end-uses are VOC, like HCFO-1233yd(Z), while others are excluded from the definition of VOC.

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 cleaning solvents industry.

EPA finds HCFO-1233yd(Z) 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.

E. Adhesives, Coatings, and Inks

1. HCFO-1233yd(Z)

EPA's decision: EPA finds HCFO-1233yd(Z) acceptable as a substitute for use as a carrier solvent in:

- Coatings

HCFO-1233yd(Z) is also known as (Z)-1-chloro-2,3,3-trifluoropropene (CAS Reg. No. 1263679-68-0).

You may find a copy of the applicant's submission, with CBI redacted, providing the required health and environmental information for this

substitute in this end-use in Docket EPA-HQ-OAR-2003-0118 at www.regulations.gov under the name, "Supporting Materials for Notice 37 Listing of HCFO-1233yd(Z) in Cleaning Solvents, Aerosol Solvents, and Coatings. SNAP Submission Received March 12, 2019." 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:

- "Risk Screen on Substitutes in Coatings. Substitute: HCFO-1233yd(Z)."

Environmental information: The environmental information for this substitute is set forth in the "Environmental information" section in listing I.C.1., above.

Flammability information: HCFO-1233yd(Z) 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.C.1., above.

Comparison to other substitutes in these end-uses: HCFO-1233yd(Z) has an ODP of less than 0.00003, comparable to or less than other listed substitutes in this end-use with ODPs ranging from zero to 0.00034.

For coatings, HCFO-1233yd(Z)'s GWP of less than one is lower than that of other acceptable substitutes such as HFE-7200 and HFE-7100 with GWP's ranging from 59 to 297. HCFO-1233yd(Z)'s GWP is lower than or

comparable to the GWP's of other acceptable substitutes for coatings, including acetone, MPHE, and *trans*-1-chloro-3,3,3-trifluoroprop-1-ene with GWP's ranging from less than one to seven. Some acceptable substitutes in this end-use are VOC, like HCFO-1233yd(Z), while others are excluded from the definition of VOC.

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 coatings industry.

EPA finds HCFO-1233yd(Z) acceptable in the coatings end-use because it does not pose greater overall environmental and human health risk than other available substitutes in the same end-use.

List of Subjects in 40 CFR Part 82

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

Hans Christopher Grundler,

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 (<i>new equipment only</i>).	HCFO-1233zd(E)	Acceptable	HCFO-1233zd(E) is also known as <i>trans</i> -1-chloro-3,3,3-trifluoroprop-1-ene (Chemical Abstracts Service Registry Number [CAS Reg. No.] 102687-65-0). HCFO-1233zd(E) has an ozone depletion potential (ODP) of less than 0.0004 and a 100-year integrated global warming potential (GWP) of about 3.7. HCFO-1233zd(E) is nonflammable. The Workplace Environmental Exposure Limits (WEEL) committee of the Occupational Alliance for Risk Science (OARS) has established a WEEL of 800 ppm as an eight-hour time-weighted average (8-hr TWA) for HCFO-1233zd(E).
Ice Skating Rinks (<i>new equipment only</i>).	HCFO-1233zd(E)	Acceptable	HCFO-1233zd(E) is also known as <i>trans</i> -1-chloro-3,3,3-trifluoroprop-1-ene (CAS Reg. No. 102687-65-0). HCFO-1233zd(E) has an ODP of less than 0.0004 and a GWP of about 3.7. HCFO-1233zd(E) is nonflammable. OARS has established a WEEL of 800 ppm on an 8-hr TWA for HCFO-1233zd(E).
Industrial Process Air Conditioning (<i>new equipment only</i>).	HCFO-1233zd(E)	Acceptable	HCFO-1233zd(E) is also known as <i>trans</i> -1-chloro-3,3,3-trifluoroprop-1-ene (CAS Reg. No. 102687-65-0). HCFO-1233zd(E) has an ODP of less than 0.0004 and a GWP of about 3.7. HCFO-1233zd(E) is nonflammable. OARS has established a WEEL of 800 ppm on an 8-hr TWA for HCFO-1233zd(E).

¹ See recommendations in the manufacturer's SDS and guidance for all listed refrigerants.

FOAM BLOWING AGENTS

End-use	Substitute	Decision	Further information ¹
Extruded Polystyrene: Boardstock and Billet.	Blends of 10 to 90 percent HFO-1234ze(E) by weight and the remainder HCFO-1233zd(E).	Acceptable	This substitute is blends of 10 to 90 percent HFO-1234ze(E) by weight and the remainder HCFO-1233zd(E). HFO-1234ze(E) is also called 1,3,3,3-tetrafluoropropene(E), or <i>trans</i> -1,3,3,3-tetrafluoropropene (Chemical Abstracts Service Registry Number [CAS Reg. No.] 29118-24-9). HCFO-1233zd(E) is also called <i>trans</i> -1-chloro-3,3,3-trifluoro-prop-1-ene (CAS Reg. No. 102687-65-0).

FOAM BLOWING AGENTS—Continued

End-use	Substitute	Decision	Further information ¹
Extruded Polystyrene: Boardstock and Billet.	Blends of 10 to 90 percent HFO-1234ze(E) by weight and the remainder HFC-152a.	Acceptable	<p>HFO-1234ze(E) has a 100-year integrated global warming potential (GWP) of less than one.</p> <p>HCFO-1233zd(E) has an ozone depletion potential (ODP) of less than 0.0004 and a GWP of 3.7. The blends have an ODP ranging from less than 0.0004 to less than 0.0004 and range in GWP from about 1.3 to about 3.4.</p> <p>HFO-1234ze(E) is not flammable at standard temperature and pressure, however, however, at higher temperatures, such as the temperatures typical for extruding extruded polystyrene: boardstock and billet (XPS), HFO-1234ze(E) may be flammable, particularly at higher humidity levels. HCFO-1233zd(E) is non-flammable.</p> <p>The American Industrial Hygiene Association (AIHA) has established a Workplace Environmental Exposure Limit (WEEL) of 800 ppm as an eight-hour time-weighted average (8-hr TWA) for HFO-1234ze(E), and the Occupational Alliance for Risk Sciences (OARS) has established a WEEL of 800 ppm as an 8-hr TWA for HCFO-1233zd(E).</p> <p>This substitute is blends of 10 to 90 Percent HFO-1234ze(E) by weight and the remainder HFC-152a. HFO-1234ze(E) is also called 1,3,3,3-tetrafluoropropene (E), or <i>trans</i>-1,3,3,3-tetrafluoropropene (CAS Reg. No. 29118-24-9). HFC-152a is also called 1,1-difluoroethane (CAS Reg. No. 75-37-6).</p> <p>The blend and its components have an ODP of zero. HFO-1234ze(E) has a GWP of less than one and HFC-152a has a GWP of 124. The blends range in GWP from about 13 to about 112.</p> <p>HFO-1234ze(E) is not flammable at standard temperature and pressure, however, at higher temperatures, such as the temperatures typical for extruding XPS, HFO-1234ze(E) may be flammable, particularly at higher humidity levels. HFC-152a is flammable at standard temperature and pressure.</p> <p>The AIHA has established a WEEL of 1,000 ppm for HFC-152a and a WEEL of 800 ppm for HFO-1234ze(E), both as an 8-hr TWA.</p>
Extruded Polystyrene: Boardstock and Billet.	Blends of 0-100% HFO-1234ze(E), 0-70% Methyl Formate, 0-60% HFC-152a, 0-60% CO ₂ and 0-60% Water.	Acceptable	<p>This substitute is blends of 0-100% HFO-1234ze(E), 0-70% methyl formate, 0-60% HFC-152a, 0-60% CO₂ and 0-60% water. HFO-1234ze(E) is also called 1,3,3,3-tetrafluoropropene (E), or <i>trans</i>-1,3,3,3-tetrafluoropropene (CAS Reg. No. 29118-24-9). Methyl formate is also called methyl methanoate or formic acid, methyl ester (CAS Reg. No. 107-31-3). HFC-152a is also called 1,1-difluoroethane, has CAS Reg. No. 75-37-6. CO₂ has CAS Reg. No. 124-38-9, and water has CAS Reg. No. 7732-18-5.</p> <p>HFO-1234ze(E) and water have GWPs of less than one, CO₂ has a GWP of one, methyl formate has a GWP of 11, and HFC-152a has a GWP of 124. The blends range in GWP from approximately one to 80.</p> <p>HFO-1234ze(E) is not flammable at standard temperature and pressure; however, at higher temperatures, such as the temperatures typical for extruding XPS, HFO-1234ze(E) may be flammable, particularly at higher humidity levels. HFC-152a and methyl formate are flammable at standard temperature and pressure.</p> <p>The AIHA has established a WEEL of 1,000 ppm for HFC-152a and a WEEL of 800 ppm for HFO-1234ze(E), both as an 8-hr TWA.</p>

¹ See recommendations in the manufacturer's SDS and guidance for all listed foam blowing agents.

CLEANING SOLVENTS

End-use	Substitute	Decision	Further information ¹
Electronics cleaning, metals cleaning, precision cleaning.	HCFO-1233yd(Z)	Acceptable	<p>HCFO-1233yd(Z) is also known as (Z)-1-chloro-2,3,3-trifluoropropene (CAS Reg. No. 1263679-68-0).</p> <p>HCFO-1233yd(Z) has an ozone depletion potential (ODP) of 0.00003 and a global warming potential (GWP) of less than 1.</p> <p>This compound is nonflammable.</p> <p>The manufacturer recommends an acceptable exposure limit (AEL) for the workplace for HCFO-1233yd(Z) of 250 ppm on an eight-hour time-weighted average (8-hr TWA).</p> <p>This substitute is subject to a Toxic Substances Control Act (TSCA) section 5(a)(2) Significant New Use Rule (SNUR).</p>

¹ See recommendations in the manufacturer's SDS and guidance for all listed cleaning solvents.

AEROSOLS

End-use	Substitute	Decision	Further information ¹
Aerosol solvents	HCFO-1233yd(Z)	Acceptable	<p>HCFO-1233yd(Z) is also known as (Z)-1-chloro-2,3,3-trifluoropropene (CAS Reg. No. 1263679-68-0).</p> <p>HCFO-1233yd(Z) has an ozone depleting potential (ODP) of 0.00003 and a global warming potential (GWP) of less than 1.</p> <p>This compound is nonflammable.</p> <p>The manufacturer recommends an acceptable exposure limit (AEL) for the workplace for HCFO-1233yd(Z) of 250 ppm on an eight-hour time-weighted average (8-hr TWA).</p> <p>This substitute is subject to a Toxic Substances Control Act (TSCA) section 5(a)(2) Significant New Use Rule (SNUR).</p>

¹ See recommendations in the manufacturer's SDS and guidance for all listed aerosols.

ADHESIVES, COATINGS, AND INKS

End-use	Substitute	Decision	Further information ¹
Coatings	HCFO-1233yd(Z)	Acceptable	HCFO-1233yd(Z) is also known as (Z)-1-chloro-2,3,3-trifluoropropene (CAS Reg. No. 1263679-68-0). HCFO-1233yd(Z) has an ozone depleting potential (ODP) of 0.00003 and a global warming potential (GWP) of less than 1. This compound is nonflammable. The manufacturer recommends an acceptable exposure limit (AEL) for the workplace for HCFO-1233yd(Z) of 250 ppm on an eight-hour time-weighted average (8-hr TWA). This substitute is subject to a Toxic Substance Control Act (TSCA) section 5(a)(2) Significant New Use Rule (SNUR).

¹ See recommendations in the manufacturer's SDS and guidance for all listed carrier solvents for adhesives, coatings, and inks.

[FR Doc. 2022-00998 Filed 1-19-22; 8:45 am]

BILLING CODE 6560-50-P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 73

[MB Docket No. 21-126; RM-11893; DA 22-25; FR ID 67334]

Television Broadcasting Services Monroe, Louisiana

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: On September 22, 2021, the Media Bureau, Video Division (Bureau) issued a *Notice of Proposed Rulemaking (NPRM)* in response to a petition for rulemaking filed by Gray Television Licensee, LLC (Petitioner), the licensee of KNOE-TV, channel 8, Monroe, Louisiana, requesting the substitution of channel 24 for channel 8 at Monroe in the Table of Allotments. For the reasons set forth in the *Report and Order* referenced below, the Bureau amends FCC regulations to substitute channel 24 for channel 8 at Monroe.

DATES: Effective January 20, 2022.

FOR FURTHER INFORMATION CONTACT: Joyce Bernstein, Media Bureau, at (202) 418-1647 or Joyce.Bernstein@fcc.gov.

SUPPLEMENTARY INFORMATION: The proposed rule was published at 86 FR 54417 on October 1, 2021. The Petitioner filed comments in support of the petition reaffirming its commitment to apply for channel 24. The Petitioner states that the Commission has recognized the deleterious effects of manmade noise from nearby electrical devices including on the reception of digital VHF signals and that the propagation characteristics of VHF channels allow undesired signals and noise to be receivable at relatively farther distances compared to UHF channels. In addition, no existing viewers will lose service and an additional 12,868 persons would gain

service if the channel substitution is granted.

This is a synopsis of the Commission's *Report and Order*, MB Docket No. 21-126; RM-11893; DA 22-25, adopted January 11, 2022, and released January 11, 2022. The full text of this document is available for download at <https://www.fcc.gov/edocs>. To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an email to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty).

This document does not contain information collection requirements subject to the Paperwork Reduction Act of 1995, Public Law 104-13. In addition, therefore, it does not contain any proposed information collection burden "for small business concerns with fewer than 25 employees," pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 44 U.S.C. 3506(c)(4). Provisions of the Regulatory Flexibility Act of 1980, 5 U.S.C. 601-612, do not apply to this proceeding. The Commission will send a copy of this *Report and Order* in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act, *see* 5 U.S.C. 801(a)(1)(A).

List of Subjects in 47 CFR Part 73

Television.

Federal Communications Commission.

Thomas Horan,

Chief of Staff, Media Bureau.

Final Rule

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR part 73 as follows:

PART 73—RADIO BROADCAST SERVICE

■ 1. The authority citation for part 73 continues to read as follows:

Authority: 47 U.S.C. 154, 155, 301, 303, 307, 309, 310, 334, 336, 339.

■ 2. In § 73.622(j), amend the Table of Allotments, under Louisiana, by revising the entry for Monroe to read as follows:

§ 73.622 Digital television table of allotments.

* * * * *

(j) * * *

Community	Channel No.
* * *	* * *
LOUISIANA	
* * *	* * *
Monroe	* 13, 24
* * *	* * *

[FR Doc. 2022-01001 Filed 1-19-22; 8:45 am]

BILLING CODE 6712-01-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 665

[Docket No. 220113-0014]

RIN 0648- BK72

Pacific Island Fisheries; Annual Catch Limit and Accountability Measures; Main Hawaiian Islands Deep 7 Bottomfish for Fishing Years 2021–2024

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Final rule.

SUMMARY: In this final rule, NMFS implements an annual catch limit (ACL) of 492,000 lb (223,167 kg) for Deep 7 bottomfish in the main Hawaiian Islands (MHI) for each of the three fishing years 2021–22, 2022–23, and 2023–24. As an in-season accountability measure (AM), if NMFS projects that the