

Fact Sheet

Proposed Rule 27 – Protection of Stratospheric Ozone: Listing of Substitutes Under the Significant New Alternatives Policy Program

Summary of Action

On October 24, 2025, U.S. Environmental Protection Agency (EPA) proposed a rule under the Significant New Alternatives Policy (SNAP) Program. This action proposes to:

- List several substitutes as acceptable, subject to use conditions, in the refrigeration and air conditioning sector
- List one substitute as acceptable, subject to use conditions, in the fire suppression sector
- Update use conditions for multiple refrigerants
- Co-propose two use condition options related to equipment certification or industry safety standard requirements for multiple refrigerants

Proposed Revisions

This action proposes to list a number of substances as acceptable, subject to use conditions, in the Refrigeration and Air Conditioning and Fire Suppression sectors. EPA is proposing to issue these listings based on evaluation of the substitutes addressed in this action using the SNAP criteria for review and considering other available and potentially available substitutes. For some proposed listings in the Refrigeration and Air Conditioning sector, EPA is co-proposing two options for a use condition: one that would require equipment meet all the requirements listed in the most recent edition, as of August 2025, of the Underwriters Laboratories (UL) standard for the end-use, and one that would require equipment to be certified by an Occupational Safety and Health Administration (OSHA) Nationally Recognized Testing Laboratory (NRTL).

This action also proposes to update the use conditions for the refrigerant R-290 (propane) in water coolers and for eight refrigerants in residential and light commercial AC and heat pump applications. EPA proposes that the same two co-proposed use condition options apply to these updated listings. R-290 was previously listed as acceptable, subject to use conditions, in new water coolers in SNAP Rule 21 (81 FR 86779; December 1, 2016). This proposed action would update those conditions to either reflect UL Standard 399, 8th edition, in place of the 7th edition, or require new water coolers be certified by an NRTL. Similarly, the eight other refrigerants were listed as acceptable, subject to use conditions, in new residential and light commercial AC and heat pump applications in SNAP Rules 19 (80 FR 19454; April 10, 2015), 23 (86 FR 24444; May 6, 2021), and 25 (88 FR 26382; April 28, 2023). This proposed action would update those conditions to either reflect UL Standard 60335-2-40, 4th edition, in place of UL Standard 60335-2-40, 3rd edition, and UL Standard 484, or require new residential and light commercial AC and heat pump equipment be certified by an NRTL. These proposed updated use conditions would apply to equipment manufactured after the effective date of a final rule based on this proposal.

With regards to motor vehicle air conditioning (MVAC), this action also proposes to list HFO-1234yf as acceptable in MVAC in new buses and heavy duty on-highway vehicles. It also proposes to list a number of refrigerant blends as acceptable as retrofits in certain MVAC applications, including R-444A, R-456A, R-452A, R-480A, and R-1234yf.

Lastly, this action proposes to list as a total flooding agent in fire suppression 2-Bromo-3,3,3-trifluoro-1-propene/carbon dioxide (2-BTP/CO₂) as acceptable, subject to use conditions, for use in normally unoccupied spaces onboard aircraft including engines, auxiliary power units, and cargo bays.

Acceptable Alternatives, with Use Conditions

End-Use	Substitutes	Conditions ¹
Refrigeration & Air Conditioning		
Residential and Light Commercial AC and Heat Pumps (New)	HCR 4141, HFO-1234ze(E), R-516°	Acceptable Subject to Use Conditions ²
Household Refrigerators and Freezers (New)	HCR 4141	Acceptable Subject to Use Conditions ³
Positive Displacement and Centrifugal Chillers (New)	R-516A	Acceptable Subject to Use Conditions
Motor Vehicle Air Conditioning (MVAC) – Light- and Medium- Duty Vehicles (Retrofit)	HFO-1234yf, R-444A, R-456A, R-480A	Acceptable Subject to Use Conditions
MVAC – Heavy-Duty On-Highway (HDOH) Vehicles (New)	HFO-1234yf	Acceptable Subject to Use Conditions
MVAC – HDOH Vehicles (Retrofit)	R-456A, R-480A	Acceptable Subject to Use Conditions
MVAC – Heavy-Duty Pickup Trucks and Vans (Retrofit)	R-444A, R-456A, R-480A	Acceptable Subject to Use Conditions
MVAC – Buses (New)	HFO-1234yf	Acceptable Subject to Use Conditions
MVAC – Buses and Trains (Retrofit)	R-456A, R-480A, R-453A	Acceptable Subject to Use Conditions
Fire Suppression		
Total Flooding for use in normally unoccupied spaces onboard aircraft – engine nacelles, auxiliary power units, and cargo bays	2-BTP/CO ₂	Acceptable Subject to Use Conditions

¹ For specific use conditions for substitutes listed as Acceptable Subject to Use Conditions, consult the proposed rule.

² The EPA is taking comment on whether to finalize either: a use condition which would require use consistent with UL Standard 60335-2-40, 4th edition, or a use condition which would require certification by an NRTL.

³ EPA is taking comment on whether to finalize either: a use condition which would require use consistent with UL Standard 60335-2-24, 3rd edition, or a use condition which would require certification by an NRTL.

Acceptable Alternatives, with Updated Use Conditions

End-Use	Substitutes	Updated Conditions ¹
Refrigeration & Air Conditioning		
Residential and Light Commercial AC and Heat Pumps (New)	HFC-32, R-452B, R-454A, R-454B, R-454C, R-457A, R-290, R-441A	Acceptable only for use in new equipment ² specifically designed for the refrigerant. Hazard markings and labels required. EPA is taking comment on whether to finalize either: a use condition which would require use consistent with UL Standard 60335-2-40, 4 th edition, or a use condition which would require certification by an NRTL.
Water Coolers (New)	R-290	Acceptable only for use in new equipment ² specifically designed for the refrigerant. Hazard markings and labels required. EPA is taking comment on whether to finalize either: a use condition which would require use consistent with UL Standard 399, 8 th edition, or a use condition which would require certification by an NRTL.

¹ For specific use conditions, consult the proposed rule.

² Applies to new equipment manufactured after the effective date of a final rule based on this proposal. Equipment manufactured between the effective date of the final rule and up to two years after the effective date of the final rule may follow either existing use conditions or the proposed updated use conditions. Consult the proposed rule for details.

Background

Under the Clean Air Act (CAA) section 612, EPA's SNAP Program reviews substitutes in a comparative risk framework. EPA lists these substitutes as acceptable, acceptable subject to use conditions, acceptable subject to narrowed use limits, or unacceptable (prohibited) for specific uses. Section 612 requires EPA to list as acceptable those substitutes that do not present a significantly greater risk to human health and the environment as compared with other substitutes that are currently or potentially available.

As part of the evaluation of overall risk to human health and the environment, the EPA considers many criteria, including the flammability and toxicity of a substitute, worker and consumer exposure, and environmental risks such as impacts on ecosystems, local air quality, and on the atmosphere.

How to Comment

- If requested, EPA will hold a virtual public hearing for the proposed action 15 days after publication of this proposal in the *Federal Register*.
- EPA will accept comments for 45 days after the proposal is published in the *Federal Register*.
- Comments, identified by Docket ID No. EPA-HQ-OAR-2024-0503, may be submitted via one of the following methods:
 - Go to <https://www.regulations.gov/> and follow the online instructions for submitting a comment (our preferred method).
 - Mail: U.S. Environmental Protection Agency, EPA Docket Center, Docket ID No. EPA-HQ-OAR-2024-0503, Mail Code 28221T, 1200 Pennsylvania Avenue NW, Washington, DC 20460.
 - Hand/Courier Delivery: EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue NW, Washington, DC 20004. The Docket Center's hours of operation are 8:30 a.m. to 4:30 p.m., Monday-Friday (except federal holidays).

More Information

- For more information on this action, please visit our website: <https://www.epa.gov/snap>.
- This action and other background information are also available online at <https://www.regulations.gov/>. Materials for this proposed action can be accessed using Docket ID No. EPA-HQ-OAR-2024-0503.