



April 2023

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

## FACT SHEET

# Final Rule 25 – Protection of Stratospheric Ozone: Listing of Substitutes under the Significant New Alternatives Policy Program in the Refrigeration & Air Conditioning and Fire Suppression Sectors

## Significant New Alternatives Policy (SNAP) Program

Under section 612 of the Clean Air Act (CAA), EPA 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, 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 global atmosphere.

## Today's Action

This final rule lists seven refrigerants and three fire suppressants as acceptable, subject to use conditions, or acceptable, subject to narrowed use limits, in the Refrigeration & Air Conditioning and the Fire Suppression & Explosion Protection sectors. Consistent with CAA section 612, EPA is issuing 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. To ensure their safe use, EPA has referenced industry standards (UL 60335-2-40, 3<sup>rd</sup> Edition, UL 61010-2-011, 2<sup>nd</sup> Edition and ASHRAE 15-2019) in the use conditions for the refrigerants listed as acceptable.

### Final Rule

#### *What is finalized in the rule?*

- Listings for seven refrigerants and three fire suppressants as acceptable, subject to use conditions, or acceptable, subject to narrowed use limits
- Revision of use conditions for HFC-32 in new self-contained room air conditioners and heat pumps for consistency with other SNAP listings
- Adoption of recent air conditioning and refrigeration industry standards to ensure safe use of covered refrigerants

#### *Which industrial sectors are included?*

- Refrigeration & Air Conditioning
- Fire Suppression & Explosion Protection

#### *Who will be affected?*

- Chemical producers
- Equipment manufacturers
- Commercial and consumer end users of equipment and products using refrigerants and fire suppressants
- Service technicians

### AIM Act

These listings support the transitions from hydrofluorocarbons (HFCs). The United States is phasing down HFCs consistent with the American Innovation and Manufacturing (AIM) Act's schedule and has recently proposed to restrict the use of certain higher-global warming potential (GWP) HFCs in specific sectors and subsectors (December 15, 2022, 87 FR 76738).

This action also modifies a use condition for the listing for HFC-32 used in the Refrigeration & Air Conditioning sector. EPA previously found the refrigerant HFC-32 acceptable, subject to use conditions, in new self-contained room air conditioners and heat pumps in SNAP Rule 19 (80 FR 19461; April 10, 2015). This final action modifies those use conditions to be consistent with use conditions applied to other refrigerants with similar flammability as finalized in SNAP Rule 23 (86 FR 24444; May 6, 2021). The use conditions address safe use of flammable refrigerants and allow manufacturers to use either UL Standard 60335-2-40, 3<sup>rd</sup> Edition or UL Standard 484, 8<sup>th</sup> Edition, a legacy standard that UL will sunset on January 1, 2024. Beginning January 2, 2024, manufacturers must meet the requirements in UL Standard 60335-2-40, 3<sup>rd</sup> Edition. This updated use condition will apply to new equipment manufactured after the effective date of this final rule.

EPA is not establishing a new Non-Residential Dehumidifier end-use. This change from the proposal only affects whether a new category is established, not the overall acceptability of HFC-32 for use in non-residential dehumidifiers. After review of the comments received, EPA is clarifying that dehumidifiers for non-residential use fall under the Residential and Light Commercial Air Conditioning and Heat Pumps end-use. All previously listed substitutes in this end-use, including HFC-32, will apply to non-residential dehumidification equipment.

## Summary of Final Rule

### ACCEPTABLE ALTERNATIVES, WITH USE CONDITIONS

End-Use	Substitutes	Conditions*
<b>Refrigeration &amp; Air Conditioning</b>		
Centrifugal Chillers (New) for comfort cooling	HFC-32, HFO-1234yf, R-452B, R-454A, R-454B, R-454C	Acceptable Subject to Use Conditions
Positive Displacement Chillers (New) for comfort cooling	HFC-32, HFO-1234yf, R-452B, R-454A, R-454B, R-454C	Acceptable Subject to Use Conditions
Industrial Process Air Conditioning (New) using a chiller	HFC-32, HFO-1234yf, R-452B, R-454A, R-454B, R-454C	Acceptable Subject to Use Conditions
Residential Dehumidifiers (New)	HFC-32, HFO-1234yf, R-452B, R-454A, R-454B, R-454C	Acceptable Subject to Use Conditions
Very Low Temperature Refrigeration (New)	R-1150 (ethylene)	Acceptable Subject to Use Conditions
<b>Fire Suppression</b>		
Streaming Agent for non-residential use, except home offices and boats	2-BTP	Acceptable Subject to Use Conditions
Total Flooding for use in normally unoccupied spaces under 500 ft <sup>3</sup>	2-BTP	Acceptable Subject to Use Conditions
Total Flooding for use in normally unoccupied spaces	EXXFIRE®, Powdered Aerosol H (Pyroquenched- $\alpha$ ™)	Acceptable Subject to Use Conditions

\*For specific use conditions for substitutes listed as Acceptable Subject to Use Conditions, consult the Final Rule.

## ACCEPTABLE ALTERNATIVES, WITH NARROWED USE LIMITS

End-Use	Substitutes	Narrowed Use Limits
<b>Refrigeration &amp; Air Conditioning</b>		
Very Low Temperature Refrigeration (New)	R-1150 (ethylene)	<ul style="list-style-type: none"> <li>R-1150 may only be used in equipment designed specifically to reach temperatures lower than -80 °C (-112 °F).</li> <li>Manufacturers of new very low temperature equipment would need to demonstrate that other alternatives are not technically feasible. They must document the results of their evaluation that showed the other alternatives to be not technically feasible and maintain that documentation in their files. This documentation, which does not need to be submitted to EPA unless requested to demonstrate compliance, “shall include descriptions of substitutes examined and rejected, processes or products in which the substitute is needed, reason for rejection of other alternatives, e.g., performance, technical or safety standards, and the anticipated date other substitutes will be available and projected time for switching to other available substitutes.” (40 CFR 82.180(b)(3)).</li> </ul>

## ACCEPTABLE ALTERNATIVES, WITH MODIFIED USE CONDITIONS

End-Use	Substitutes	Modified Use Conditions*
<b>Refrigeration &amp; Air Conditioning</b>		
Residential and Light Commercial Air Conditioning and Heat Pumps—self-contained room air conditioners only (New)	HFC-32	<p>Acceptable only for use in new equipment** specifically designed for the refrigerant, including conditions requiring either:</p> <ul style="list-style-type: none"> <li>Use consistent with UL Standard 484, 8<sup>th</sup> Edition, including testing, charge sizes, ventilation, usage space requirements, and certain hazard warnings and markings until January 1<sup>st</sup>, 2024, after which only use consistent with UL Standard 60335-2-40, 3<sup>rd</sup> Edition will apply</li> <li>Use consistent with UL Standard 60335-2-40, 3<sup>rd</sup> Edition, including testing, charge sizes, ventilation, usage space requirements, and certain hazard warnings and markings</li> </ul>

\*Consult the Final Rule for the remainder of existing use conditions that also apply to this listing.

\*\*Applies to new equipment manufactured after the effective date of the Final Rule.