

ACCEPTABLE ALTERNATIVES, WITH USE CONDITIONS

End-Use	Substitutes	Conditions*
Refrigeration & Air Conditioning		
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

*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
Refrigeration & Air Conditioning		
Very Low Temperature Refrigeration (New)	R-1150 (ethylene)	<ul style="list-style-type: none"> R-1150 may only be used in equipment designed specifically to reach temperatures lower than -80 °C (-112 °F). 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)).

ACCEPTABLE ALTERNATIVES, WITH MODIFIED USE CONDITIONS

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

*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.