

# Notice of Public Availability of Modified Text and Availability of Additional Documents

## Proposed Amendments to the Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chillers, Aerosols-Propellants, and Foam End-Uses Regulation

Public Hearing Date: December 10, 2020  
Public Availability Date: May 13, 2021  
Deadline for Public Comment: May 28, 2021

At its December 10, 2020, public hearing, the California Air Resources Board (CARB or Board) approved for adoption the proposed amendments to sections 95371, 95372, 95373, 95374, 95375, 95376, 95377, 95378, and added section 95379 Article 4, Subarticle 5, Chapter 1, Division 3, Title 17, California Code of Regulations, which prohibits certain substances in refrigeration, air-conditioning, chillers, ice rinks, cold storage, aerosols-propellants, and foam end-uses to reduce high-global warming hydrofluorocarbon (HFC) emissions and support California's greenhouse gas (GHG) emission reduction goals.

In Resolution 20-37, the Board recognized the importance of near term actions to reduce GHGs, including HFCs, by ensuring successful and orderly transition to lower global warming potential (GWP) refrigerants, which is necessary to reduce the impacts of climate change, and meet California's legal mandate to reduce HFC emissions by 40 percent below 2013 levels by 2030, as identified in section 39730.5 of the Health and Safety Code.

The Board, therefore, approved the adoption of the proposed amendments and found that an additional compliance pathway for air conditioner manufacturers was appropriate.<sup>1</sup> The Board directed the Executive Officer to determine if additional conforming modifications to the regulation were appropriate and to make any proposed modified regulatory language available for public comment, with any additional supporting documents and information, for a period of at least 15 days in accordance with Government Code section 11346.8. The Board further directed the

---

<sup>1</sup> See State of California, Air Resources Board, Board Hearing Transcript, December 10, 2020. Available at: <https://ww3.arb.ca.gov/board/mt/2020/mt121020.pdf>.

Executive Officer to consider written comments submitted during the public review period and make any further modifications that are appropriate available for public comment for at least 15 days. The Executive Officer was directed to evaluate all comments received during the public comment periods, including comments raising significant environmental issues, and prepare written responses to such comments as required by CARB's certified regulations at California Code of Regulations, title 17, sections 60000-60007 and Government Code section 11346.9, subdivision (a).

Consistent with Board direction, staff developed modified regulatory language regarding creating a refrigerant reclaim program. Following consideration of the comments received on the proposed modifications, staff is proposing additional modifications, as described in this notice.

The resolution and all other regulatory documents for this rulemaking are available online at the following [CARB website](https://ww2.arb.ca.gov/rulemaking/2020/hfc2020):  
<https://ww2.arb.ca.gov/rulemaking/2020/hfc2020>.

The text of the modified regulatory language is shown in Modifications to the Proposed Regulation Order. The originally proposed regulatory language is shown in ~~striketrough~~ to indicate deletions and underline to indicate additions. New deletions and additions to the proposed language that are made public with this notice are shown in ~~double striketrough~~ and double underline format, respectively.

In the Final Statement of Reasons, staff will respond to all comments received on the record during the comment periods. The Administrative Procedure Act requires that staff respond to comments received regarding all noticed changes. Therefore, staff will only address comments received during this 15-day comment period that are responsive to this notice, documents added to the record, or the changes detailed in Modifications to the Proposed Regulation Order.

## **Summary of Proposed Modifications**

Staff's proposed modifications to the original proposed amendments to the regulatory text in sections 95371 through 95379, Title 17, California Code of Regulations<sup>2</sup> are summarized below and attached to this notice, titled *Modifications to the Proposed Regulation Order*. The following summary does not include all modifications to correct typographical or grammatical errors, changes in numbering or formatting, nor does it include all of the non-substantive revisions made to improve clarity.

### **A. Modification to Definitions (Cal. Code Regs., tit. 17, § 95373).**

The following new definitions and acronyms were added:

---

<sup>2</sup> All subsequent section references are to Title 17, California Code of Regulations unless otherwise noted.

- *“Certified Reclaimed Refrigerant”* was added to support the requirements for new subsection 95375(c)(4) *“Refrigerant Recovery, Reclaim, and Reuse Requirements”* (R4 Program). This definition is necessary to characterize and represent what certified reclaimed refrigerant is, define its parameters, and align with the United States Environmental Protection Agency’s (U.S. EPA) definition.
- *“Other Air-conditioning”* or *“Other Air-conditioning Equipment”* was added when the single compliance date of January 1, 2023 for all new air-conditioning equipment was changed to three separate compliance dates depending upon the type of air-conditioning equipment. The types of air-conditioning with compliance dates of January 1, 2023 and January 1, 2026 are specifically defined and included in the regulation end-use compliance Table 3. *“Other air-conditioning”* with a compliance date of January 1, 2025 includes all air-conditioning not otherwise specifically defined in the proposed regulation text.
- *“Packaged Terminal Air Conditioner”* or *“PTAC”* was added to establish a specific type of air conditioning equipment to reflect different GWP prohibitions effective date, which previously only had one GWP prohibition date. Now, based on the *“type”* of air conditioner (AC), there are different compliance dates. This definition is necessary to properly define what date corresponds with each type of equipment.
- *“Portable Air Conditioner”* was added to establish a specific type of air conditioning equipment to reflect different GWP prohibitions effective date, which previously only had one GWP prohibition date. Now, based on the *“type”* of AC, there are different compliance dates. This definition is necessary to properly define what date corresponds with each type of equipment.
- *“Residential Dehumidifier”* was added to establish a specific type of air conditioning equipment to reflect different GWP prohibitions effective date, which previously only had one GWP prohibition date. Now, based on the *“type”* of AC, there are different compliance dates. This definition is necessary to properly define what date corresponds with each type of equipment.
- *“Room Air Conditioner,”* or *“Wall Air Conditioner,”* or *“Window Air Conditioner”* was added to establish a specific type of air conditioning equipment to reflect different GWP prohibitions effective date, which previously only had one GWP prohibition date. Now, based on the *“type”* of AC, there are different compliance dates. This definition is necessary to properly define what date corresponds with each type of equipment.
- *“Variable Refrigerant Flow (VRF)”* was added to establish a specific type of air conditioning equipment to reflect different GWP prohibitions effective date, which previously only had one GWP prohibition date. Now, based on the

“type” of AC, there are different compliance dates. This definition is necessary to properly define what date corresponds with each type of equipment.

The following existing definitions were revised:

- “*Air-conditioning Equipment*” or “*Air-conditioning System*” was clarified to include heating as one of the functions on an air-conditioner, and specifically includes the term “heat pump” within the definition. Due to the nature of heat pumps, the definition for “Air-conditioning Equipment” or “Air-conditioning System” always included heat pumps used for space conditioning (heating or cooling). However, stakeholders requested clarity on this issue so the term “heat pump” was added to the existing definition to remove any ambiguity and make it very clear to all stakeholders and the general public that heat pumps are included in the definition.
- “*New Air-conditioning Equipment*” was revised to include provisions for air-conditioning systems that have more than one outdoor compressor or condenser. The unrevised version would require an entirely new air-conditioning system even if only one of multiple outdoor compressors or condensers on an existing system were replaced. This unrevised version would have placed a burden on end-users of air-conditioning equipment that used a system with more than one outdoor compressor or condenser. The revised regulatory language provides clarity on what “new” means for an air-conditioning system with more than one outdoor compressor or condenser.
- “*New Facility*” was revised to add “ice rinks,” which was included in the purpose section and defined but inadvertently excluded in the new facility definition. This change is necessary to reduce confusion on what requirements apply to ice rinks.
- “*New Refrigeration Equipment*” was revised to add “ice rinks,” which was included in the purpose section and defined but inadvertently excluded in the new “New Refrigeration Equipment” definition. This change is necessary to reduce confusion on what requirements apply to ice rinks.

#### **B. Modification to Effective Dates (Cal. Code Regs., tit. 17, § 95374).**

(1) Table 3: End-use and Prohibited Substances (Cal. Code Regs., tit. 17, § 95374, subd. (c)).

In the original amendments (45-Day notice), all types of AC equipment had one compliance date (January 1, 2023) to begin using refrigerants with a GWP lower than 750 by that effective date. After meeting with stakeholders following the 45-Day notice, stakeholders communicated the need to extend certain dates based on the AC type to be in alignment with current and future updates to the California building codes.

The necessity for this change is due to additional time needed to update safety standards and California building codes that apply to most types of AC equipment. Currently, California building codes and the safety standards referenced in the building codes do not allow most types of AC equipment that contain flammable refrigerants. Equipment manufacturers have indicated that the most viable refrigerants with a GWP less than 750 are categorized as lower flammability refrigerants, or “A2L” refrigerants. California building codes and standards will not be revised to allow A2L refrigerants in most types of AC equipment in California until after the original effective date of January 1, 2023, and at the earliest by July 1, 2024, based on the existing building code adoption process and timeline.

At the time of the 45-Day notice, the building code update was still under consideration by the State Fire Marshall (SFM). After the 45-Day notice and before the Board Hearing, the SFM indicated that the office would not be recommending revisions to allow A2L refrigerants in additional types of AC equipment in California. While there are additional alternatives being considered, those alternatives are not commercially available and there are additional considerations and approvals that need to occur.

However, there are some types of equipment that are permitted under existing safety standards and California building codes to use A2L refrigerants and are able to meet the GWP requirements by 2023. Of the types of equipment that are currently permitted to use A2L refrigerants, some already have A2L refrigerant products available on the market. This equipment contains small amounts of refrigerant. Therefore, the date stated in the 45-day notice for these equipment types remains the same (January 1, 2023).

In addition, VRF equipment using A2L refrigerants have unique challenges as these systems are fundamentally different in design compared to other types of AC. VRFs contain higher amounts of refrigerant and have extensive refrigerant piping in the occupied space compared to traditional AC systems. Existing safety standards for VRFs include strict requirements on the amount of refrigerant and extensive safety mitigation measures, which makes the use of A2L refrigerants for VRFs infeasible at this time. The presence of refrigerant (in piping) in individual rooms means that even if a small leak occurred, it could easily result in a higher amount of refrigerant in a small volume of occupied space than allowed by existing safety standards. Revisions to safety standards and corresponding building code updates are not expected to happen before 2026.

The single effective date for the GWP limits is no longer appropriate given the different status of building code and safety standards across the AC types; therefore, the amendments include three effective dates for the separate types of specific end uses in the AC category. The new compliance dates and categories are as follows:

- (a) "Room/wall/window air-conditioning equipment, PTACs, PTHPs, portable air-conditioning equipment, and residential dehumidifiers (new)" (January 1, 2023 prohibition date);
- (b) "Other air conditioning (new) equipment, residential and non-residential" (January 1, 2025 prohibition date); and
- (c) "Variable Refrigerant Flow (VRF) (new)" (January 1, 2026 prohibition date).

This change was necessary to allow a time extension where California building codes and safety standards need to be updated, while maintaining the stringency of the requirements where an extension was not needed. The AC industry has committed to continue to work with the codes and standards organizations on appropriate safety standards as well as research additional alternatives.

(2) Table 4: End-use and Prohibited Substances (Cal. Code Regs., tit. 17, § 95374, subd. (d)).

In response to stakeholder comments, the interim compliance deadline for companies owning and/or operating 20 or more retail food facilities in California and national supermarket chains to achieve company-wide emissions reductions targets was changed from January 1, 2026, to December 31, 2026. The change was made to allow for more time to meet the interim emissions reductions targets for retail food facilities and does not impact reductions by 2030.

**C. Refrigerant Recovery, Reclaim, and Reuse Requirements (R4 Program) (Cal. Code Regs., tit. 17, § 95376).**

After the initial 45-Day Comment Period and prior to the December 10, 2020, Board Hearing, CARB and stakeholders agreed to incorporate refrigerant reclaim into the proposed regulation. CARB released proposed options for a refrigerant reclaim program during the 45-Day Notice Period, which were incorporated into the notice. The proposed requirements establish a minimum amount of reclaimed refrigerant that manufacturers must use in new air conditioning equipment and servicing in existing air conditioning equipment in 2023 and 2024, and for VRF manufacturers, for years 2023, 2024, and 2025. Reporting and record-keeping requirements were also established for enforceability. Use of reclaimed refrigerants has direct GHG reduction benefits because it necessitates refrigerant recovery from equipment in use or at end of life, thereby preventing refrigerants from getting emitted or leaked. As discussed by staff at the Board Hearing in December 2020, one of the purposes of the R4 program is to enable better recovery, reclaim and reuse of high-GWP refrigerants, all of which are a key part of CARB's HFC emissions reduction strategy.

To add the new requirements, section 95376 was re-purposed to contain the "Refrigerant Recovery, Reclaim and Reuse Requirements." The previous section 95376

was renumbered to 95377 and subsequent sections were similarly re-numbered with a new section number 95379 added to accommodate this change.

The “Refrigerant Recovery, Reclaim, and Reuse Requirements,” or R4 Program, requires AC and VRF manufacturers to:

- Use a specified minimum amount of reclaimed refrigerant in new AC equipment or in the servicing of existing equipment.
- The minimum amount of reclaimed refrigerant is based on a percentage of the amount of refrigerant in the manufacturer’s AC and VRF equipment entered into commerce in California in 2018 and 2019 (adjusted for projected growth in shipments from 2019 to 2023).
- AC manufacturers are subject to a 10 percent refrigerant reclaim use requirement annually, for 2023 and 2024. The 10 percent requirement only includes factory charge with an assumption that field charging is negligible.
- VRF manufacturers are subject to a 15 percent refrigerant reclaim use requirement annually, for 2023 and 2024 and a 25 percent refrigerant reclaim requirement for 2025. The percent requirement is only on the factory charge and is higher than 10 percent due to the high amount of field charging. Instead of including 10 percent for both factory and field charge, staff simplified the requirement by increasing the percentage for factory charging. VRFs have much higher amount of refrigerant added during installation, commonly referred to as the field charge, because of the extensive refrigerant piping used in VRFs. Compared to their VRF counterparts of similar capacity, little to no field charge is added to conventional ACs. The field charge is site-specific and is determined by the refrigerant technician installing the system. Because the exact field charge is unknown prior to installation and unknown to the manufacturer even after installation, a 5 percent reclaim requirement was added for VRFs for 2023 and 2024. This is a nominal amount and the actual field charge may be higher. For 2025, VRFs are subject to a 25 percent reclaim use requirement because they have an additional year to comply with the 750 GWP limit and will continue to use high-GWP refrigerant for a longer period compared to other types of AC equipment.
- Certified reclaimed refrigerant can be refrigerant recovered from any geographic location as long as the reclaimed refrigerant meets the requirements of being reclaimed by a U.S. EPA certified refrigerant reclaimer, meets the requirements of 40 C.F.R. Pt. 82, Subpt. F, App, A, and contains no greater than fifteen percent new (virgin) refrigerant by weight.
- There are no requirements on where the equipment containing certified reclaimed refrigerant can be sold or distributed. Each manufacturer should

check with the geographic location to ensure that the equipment can legally be sold or distributed in that location.

- The requirement to purchase and use certified reclaimed refrigerant shall be met by AC manufacturers before July 1, 2025, and for VRF manufacturers, before July 1, 2026.
- “Early Action Credit” can be applied by equipment manufacturers to partly or completely fulfill requirements on the use of reclaimed refrigerant. Each pound of refrigerant with a GWP less than 750 used in new AC and VRF equipment before the regulation’s effective date for GWP prohibitions will be credited one pound of certified reclaimed refrigerant. Only equipment entered into commerce in California are eligible for the early action credit.
- An initial baseline report is required by each manufacturer that shows the reclaimed refrigerant required amount. Annual progress reports are required, along with a combined annual and final report.

In addition to the modifications described above, additional modifications correcting grammar, punctuation and spelling have been made throughout the proposed changes. These changes are non-substantive.

These proposed modifications do not change implementation of the regulation in any way that affects the conclusions of the environmental analysis included in the Staff Report. The proposed modifications consist primarily of definitions and provisions to ensure clarity of aspects of the rulemaking and consist of a provision that requires manufacturers to use a specified minimum amount of reclaimed refrigerant in new AC equipment or in the servicing of existing equipment. The proposed modifications to definitions and provisions do not alter the compliance responses; therefore, no additional environmental analysis or recirculation of the analysis is required. Additionally, the proposed modifications requiring manufacturers to use a certain amount of reclaimed refrigerant in AC equipment (the R4 program) will not result in a compliance response that alters the existing environmental determination for this rulemaking for the following reasons: The existing reclaimed refrigerant operations in the United States reclaim more than two million pounds of R-410A each year.<sup>3</sup> CARB staff estimate these amounts to be adequate for equipment manufacturers to meet the reclaim use requirements under the proposed R4 program. Therefore, there will be no need for reclaimed refrigerant suppliers to build new or expanded facilities to ensure AC manufacturers can comply with the proposed R4 program. Since reclaimed refrigerant is first recovered from equipment, each pound of a refrigerant that is reclaimed is essentially a pound of avoided emissions. Thus, use of reclaimed refrigerants provides GHG reductions by lowering refrigerant leaks particularly at the end of the equipment’s life for ACs.

---

<sup>3</sup> U.S.EPA, ODS and HFC reclamation totals, [https://www.epa.gov/sites/production/files/2020-07/documents/2020\\_reclamation\\_table.pdf](https://www.epa.gov/sites/production/files/2020-07/documents/2020_reclamation_table.pdf).

Given the foregoing, the proposed modifications continue to be exempt for the same reasons provided in the ISOR and, therefore, do not trigger the need to alter the environmental determination provided in the ISOR.

## **Incorporated Document Added to the Record**

In the interest of completeness and in accordance with Government Code section 11347.1, subdivision (a), staff has also added to the rulemaking record and invites comments on "Appendix A to 40 CFR Part 82, Subpart F – Specifications for Refrigerants," effective January 1, 2017.

This document is available for inspection at the California Air Resources Board, 1001 I Street, Sacramento, California, 95814, between the hours of 9:00 a.m. to 4:00 p.m., Monday through Friday (excluding holidays). Because of current travel, facility, and staffing restrictions, the California Air Resources Board's offices may have limited public access. Please contact Bradley Bechtold, Regulations Coordinator, at [bradley.bechtold@arb.ca.gov](mailto:bradley.bechtold@arb.ca.gov) (916) 322-6533 if you need a physical copy of the document.

## **Agency Contacts**

Inquiries concerning the substance of the proposed regulation may be directed to Glenn Gallagher, Staff Air Pollution Specialist, F-gas Reduction Strategy Section, at [glenn.gallagher@arb.ca.gov](mailto:glenn.gallagher@arb.ca.gov) or (designated back-up contact) Richie Kaur, Air Pollution Specialist, F-gas Reduction Strategy Section, at [richie.kaur@arb.ca.gov](mailto:richie.kaur@arb.ca.gov).

## **Public Comments**

Written comments will only be accepted on the modifications identified in this Notice. Comments may be submitted by postal mail or by electronic submittal no later than the due date to the following:

Postal mail: Clerks' Office, California Air Resources Board  
1001 I Street, Sacramento, California 95814

[Electronic submittal](https://www.arb.ca.gov/lispub/comm/bclist.php): <https://www.arb.ca.gov/lispub/comm/bclist.php>.

Please note that under the California Public Records Act (Gov. Code § 6250 et seq.), your written and verbal comments, attachments, and associated contact information (e.g., your address, phone, email, etc.) become part of the public record and can be released to the public upon request.

In order to be considered by the Executive Officer, comments must be directed to CARB in one of the two forms described above and received by CARB no later than

the deadline date for public comment listed at the beginning of this notice. Only comments relating to the above-described modifications to the text of the regulations shall be considered by the Executive Officer.

If you need this document in an alternate format or another language, please contact the Clerks' Office at (916) 322-5594 or by facsimile at (916) 322-3928 no later than five (5) business days from the release date of this notice. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

Si necesita este documento en un formato alternativo u otro idioma, por favor llame a la oficina del Secretario del Consejo de Recursos Atmosféricos al (916) 322-5594 o envíe un fax al (916) 322-3928 no menos de cinco (5) días laborales a partir de la fecha del lanzamiento de este aviso. Para el Servicio Telefónico de California para Personas con Problemas Auditivos, ó de teléfonos TDD pueden marcar al 711.

CALIFORNIA AIR RESOURCES BOARD



---

Richard W. Corey  
Executive Officer

Date: May 13, 2021

Attachment