

State of California  
AIR RESOURCES BOARD

**Final Statement of Reasons for Rulemaking,  
Including Summary of Comments and Agency Response**

PUBLIC HEARING TO CONSIDER THE PROHIBITIONS ON USE OF CERTAIN  
HYDROFLUOROCARBONS IN STATIONARY REFRIGERATION AND FOAM  
END-USES

Public Hearing Date: March 23, 2018  
Agenda Item No.: 18-2-9

**I. GENERAL**

**A. Action Taken in This Rulemaking**

The Staff Report: Initial Statement of Reasons for Rulemaking (Staff Report), entitled “Public Hearing to Consider the Proposed Regulation for Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration and Foam End-Uses,” released January 30, 2018, is incorporated by reference herein and contains a description of the rationale for the proposed regulation. On January 30, 2018, all references relied upon and identified in the staff report were made available to the public.

On March 23, 2018, following a 45-day comment period, the California Air Resources Board (CARB or Board) held a public hearing to consider the proposed regulation “Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration and Foam End-Uses” described in the Staff Report and associated Notice of Public Hearing (45-Day Notice). The regulation requirements are set forth in title 17, division 3, chapter 1, subchapter 10, article 4, subarticle 5, sections 95371-95377 of the California Code of Regulations.

Written comments were received from thirteen individuals or organizations during the 45-day comment period. Oral comments were presented by six individuals or organizations. Written comments were received by one of the six oral comment presenters. At the conclusion of the hearing, the Board adopted Resolution 18-14, which approved the regulation for adoption.

Resolution 18-14 directed the Executive Officer to determine if additional conforming modifications to the regulations were appropriate. If so, the Executive Officer was directed to make the modified regulations (with the modifications clearly identified) and any additional documents or information relied upon available for a supplemental 15-day public comment period. The Executive Officer was directed to consider any comments on the modifications received during any supplemental 15-day public comment period. The Executive Officer was then authorized to: either (1) adopt the modified regulation as it was made available for public comment, with any appropriate additional modifications; or (2) make all additional modifications available for public comment for a period of at least 15 days and present the regulations to the Board for further consideration, if warranted.

After the March 23, 2018 public hearing, staff proposed modifications to the originally proposed regulation in response to comments. The text of the proposed modifications to the regulations was made available for a 15-day public comment period by issuance of a "Notice of Public Availability of Modified Text" (15-Day Notice). The 15-day comment period started on June 15, 2018 and ended on July 2, 2018 at 5:00 pm.

When the 15-Day Notice and all attachments were posted on the internet, they were also electronically distributed to all persons that subscribed to the following CARB list-serve topics: "Climate Change," "Commercial Refrigeration Specifications," "HFC-Reduction," "Foam Recovery/Destruction Program," and "Stationary Equipment Refrigeration Management Program." The "HFC-Reduction" topic includes all persons who testified at the public hearing, submitted comments at the hearing or during the comment period, or requested notification of any proposed changes, per section 44(a), title 1, California Code of Regulations, and Government Code section 11340.85.

The Final Statement of Reasons (FSOR) updates the Staff Report by identifying and providing the rationale for the modifications made to the originally proposed regulatory text. The FSOR also contains a summary of the comments received during the formal rulemaking process by CARB on the proposed amendments or the process by which they were adopted, and CARB's responses to those comments.

## **B. Mandates and Fiscal Impacts to Local Governments and School Districts**

The Board has determined that this regulatory action will not result in a mandate to any local agency or school district the costs of which are reimbursable by the state pursuant to Part 7 (commencing with section 17500), Division 4, Title 2 of the Government Code.

## **C. Consideration of Alternatives**

For the reasons set forth in the Staff Report, in staff's comments and responses at the hearing, and in this FSOR, the Board determined that no alternative considered by the agency would be more effective in carrying out the purpose for which the regulatory action was proposed, or would be as effective and less burdensome to affected private persons, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provisions of law than the action taken by the Board.

# **II. MODIFICATIONS MADE TO THE ORIGINAL PROPOSAL**

## **A. Modifications Approved at the Board Hearing and Provided for In the 15-Day Comment Period**

Pursuant to the Board direction provided in Resolution 18-14, on March 23, 2018, CARB released a 15-Day Notice to address concerns expressed by refrigeration and foam industry representatives. The 15-Day Notice describes each substantial modification to the original proposal. The reasons for the changes are to add or revise definitions for clarity, clarify the effective dates for certain regulatory requirements, and narrow the applicability and requirements of the recordkeeping and disclosure requirements.

## B. Non-Substantial Modifications

Subsequent to the 15-day public comment period mentioned above, CARB staff identified the following additional non-substantive changes to the regulation:

- Section 95374(a). CARB staff moved the specific end-use “refrigerated food processing and dispensing equipment (new)” to precede the “vending machine” in the list of prohibited substances because the general end-use is “retail food refrigeration equipment” and this keeps all general end-uses together, which provides clarity.
- Section 95375(b). CARB staff removed the “(1)” before the regulatory language.
- Section 95375(d)(2). CARB staff renumbered section 95375(d)(2) to section 95375(d)(1).

Subsequent to the 15-day public comment period mentioned above, CARB staff made the following additional non-substantive changes to the regulation in response to review from the Office of Administrative Law:

- Section 95371. CARB staff consolidated subsections (a) and (b) and removed extra references to the laws, which are already referenced in the authority and references section to make the purpose section short and concise.
- Section 95375(c)(2)(A). CARB staff added “at the time of purchase” to this section to clarify that companies need to retain the originally submitted information when the equipment or foam system is purchased and would not be required to contact every customer to update this specific information before submitting it to CARB. This clarifies that it would not be a violation of section 95376(b) if a company retained an address, email, or phone number from the time of the transaction and submitted it to CARB upon CARB request.
- Section 95375(c)(2)(B). See rationale for revisions to section 95375(c)(2)(A) above.
- Section 95375(d)(1)(A). See rationale for revisions to section 95375(c)(2)(A) above.
- Section 95375(d)(1)(B). See rationale for revisions to section 95375(c)(2)(A) above.

Section 95376(b). CARB staff added in “(s) that are” to section 95376(b) between the words “record” and “required” to make the sentence read clearer.

These modification described above constitutes non-substantial changes to the regulatory text because they address formatting and more accurately reflect the numbering of a section, but do not materially alter the requirements or conditions of the proposed rulemaking action.

### C. Revisions to the Economic Impact Assessment

The cost impact of the regulation was revised from \$4.25 million to \$4.3 million due to revising the cost estimate for recordkeeping and disclosure. The cost of the recordkeeping and disclosure requirements was revised from \$130,000 to \$190,000, which is due to adding a markup (45%) from refrigeration and foam manufacturers, rounding wage estimates from \$39.85 to \$40 and removing the disclosure requirement for foams (see 15-Day Notice published June 15, 2018).

### III. SUMMARY OF COMMENTS AND AGENCY RESPONSE

Written comments were received during the 45-day comment period in response to the March 23, 2018 public hearing notice, and written and oral comments were presented at the Board Hearing. Listed below are the organizations and individuals that provided comments during the 45-day comment period:

**Table 1. Written comments submitted during the 45-day comment period.**

<b>Commenter</b>	<b>Date of Comment (2018)</b>	<b>Affiliation</b>
Inamdar, Harshad	March 2	Rheem Manufacturing
McGuire, Garrett	March 12	Air-Conditioning, Heating, & Refrigeration Institute (AHRI)
Paquette, Jason	March 12	Structural Concepts Corporation (SCC)
Rajendran, Rajan	March 13	Emerson Commercial & Residential Solutions
Olson, Jessica	March 15	Honeywell International Inc.
Fort, Jeffrey	March 15	Dentons US LLP
Hierlmeier, Bruce	March 18	Zero Zone
Wieroniey, Stephen	March 19	American Chemistry Council (ACC) Center for Polyurethanes Industry (CPI)
Starr, Christina	March 19	Environmental Investigation Agency (EIA)
Winningham, David	March 19	Lennox International
Mandracchia, Stephen	March 19	Hudson Technologies Company
Shoening, Palmer	March 19	Heating Air-Conditioning Refrigeration Distributors International (HARDI)
Larson, Sandy	March 19	National Automatic Merchandise Association (NAMA)/California Automatic Vendors Council (CAVC)

Listed below are the organizations and individuals that provided comments during the March 23 Board Hearing:

**Table 2. Oral comments given at the March 23, 2018 Board Hearing.**

<b>Commenter</b>	<b>Date of Comment (2018)</b>	<b>Affiliation</b>
Messner, Kevin	March 23	Association of Home Appliance Manufacturers (AHAM)
Morris, Tom	March 23	Honeywell International Inc.
Eder, Harvey	March 23	Public Solar Power Coalition
Hamilton, Kevin	Mach 23	Central California Asthma Collaborative (CCAC)
Walter-Terrinoni, Helen*	March 23	The Chemours Company
Skvarla, Mikhael	March 23	UTC-Carrier

The commenters listed above with an asterisk (\*) also submitted written comments in addition to oral testimony at the March 23 Board Hearing.

**Table 3. Written comments submitted during the 15-day comment period.**

<b>Commenter</b>	<b>Date of Comment (2018)</b>	<b>Affiliation</b>
Koscher, Justin	July 2	Polyisocyanurate Insulation Manufacturers Association (PIMA)
Wieroniey, Stephen	July 2	ACC
Wuesthoff, Edward	July 2	Heat Transfer Products Group, LLC
Schaefer, Stephen	July 2	Hoshizaki America
Carpizo, Marie	July 2	AHRI
Shebik, Ronald	July 2	Hussmann Corporation

**A. Comments Supporting Action to Reduce Emissions of HFCs**

1. Comment(s): CARB’s approach in this rulemaking is a reasonable first step, but more action is needed. (CCAC, Chemours, EIA, Honeywell)

Agency Response: CARB staff made no changes based on the received comments. CARB appreciates the support and agrees that it is important to preserve the prohibitions on high-GWP refrigerant and that more action is needed. In the Short-Lived Climate Pollutant Strategy adopted by CARB in March 2017, CARB proposed several HFC emissions mitigation measures. The HFC emissions reductions goals detailed in Senate Bill 1383 (Lara, Stat. 2016, ch. 395; Health & Saf. Code §39730.5) and the Short-Lived Climate Pollutant Strategy of “40 percent below 2013 levels by 2030” cannot be met by this regulation alone. This regulation is the first step. CARB will be proposing additional measures in future rulemakings.

2. Comment(s): If CARB were to not approve the proposed regulation adopting the Significant New Alternatives Policy (SNAP) prohibitions, then the burden of reducing hydrofluorocarbons (HFCs) would be shifted to other sectors which are less prepared to make the transition. (Chemours)

Agency Response: CARB staff made no changes based on the received comments. Please see Agency Response to comment 1.

3. Comment(s): Carrier supports CARB in moving forward with HFC reductions but transitioning to alternatives with risks such as flammability and high-pressures will take time to do safely. (Carrier)

Agency Response: CARB staff made no changes based on the received comments. Please see Agency Response to comment 1.

4. Comment(s): CARB's proposed regulation is beneficial to industry because there are a number of fluorochemical users who have invested heavily in preparation for compliance with SNAP Rules that are now at risk of stranded investments. (Chemours)

Agency Response: CARB staff made no changes based on the received comments. Please see Agency Response to comment 1.

5. Comment(s): Industry strongly supports certainty. CARB should go further. (Honeywell)

Agency Response: CARB staff made no changes based on the received comments. Please see Agency Response to comment 1.

## **B. Effective Date**

6. Comment(s): A delay in all new rules until January 1, 2019 would give industry 9 months to adapt and it would prevent the need to change dates of phase out currently scheduled for January 1, 2019. (AHRI, Lennox, Zero Zone)

Agency Response: CARB staff modified the effective dates that were originally listed as "September 1, 2018" to "January 1, 2019" to provide industry with sufficient time to comply with the proposed regulation.

## **C. Phasedown**

7. Comment(s): A phasedown of production and consumption of HFCs is preferred over prohibitions on specific HFCs. A phasedown schedule better reflects market realities and gives manufacturers a reasonable timeline to develop new technology for compliance. (AHRI, HARDI, Lennox)

Agency Response: CARB staff made no changes based on the received comment. First, it is important to note that the Kigali Amendment, the agreement

for a global phasedown of HFCs, has yet to be ratified by the United States. To take effect in the United States, it must be ratified by the U.S. Senate, followed by legislation or rulemaking by U.S. Environmental Protection Agency (U.S. EPA) to provide a mechanism for implementing the phasedown schedule.

Second, CARB conducted a peer-reviewed analysis to determine if the global HFC phasedown under the Kigali Amendment will allow California to meet its SB 1383 emissions reductions goals without additional reduction measures (CARB 2017c). While the Kigali Amendment is expected to significantly reduce HFC emissions by 2050, CARB's analysis indicates that it will not be sufficient by itself to help California achieve its SB 1383 reduction goal by 2030.

To meet California's mandates, CARB was relying, in substantial part, on U.S. EPA's SNAP Program, Rules 20 and 21. However, on August 8, 2017, in *Mexichem Fluor. v. U.S. EPA*, (D.C. 2017) 866 F. 3d 451, the D.C. Circuit Court of Appeals (D.C. Circuit) published a decision partially vacating U.S. EPA's HFC prohibitions under the SNAP Rules.

This regulation preserves certain U.S. EPA SNAP prohibitions and preserve progress towards California's HFC emissions reduction goals. The prohibitions contained in the regulation apply to end-uses for which effective dates have passed or are immediately upcoming. Regulated industries should have already transitioned to alternative substances or be well underway in their transition in order to comply with what was federal law up until August 2017.

8. Comment(s): This regulation could prevent any retail refrigeration equipment from being sold in California and prevent any repairs of existing equipment. There are no replacement refrigerants in some applications. This regulation also bans refrigerants needed for existing equipment. Equipment that needs servicing will need to be replaced instead of serviced which will be costly. (AHRI, HARDI, Lennox)

Agency Response: CARB staff made no changes based on the received comment. In this rulemaking, CARB is adopting certain U.S. EPA prohibitions on the use of certain HFCs in new and retrofit equipment. This regulation, like the U.S. EPA SNAP Rules, does not prohibit the use of HFCs in existing equipment. Existing equipment can continue to be used and serviced with the refrigerants they were using. CARB disagrees with the statement that there are no replacement refrigerants in some applications.

9. Comment(s): A phasedown process with clear benchmarks for repair, reclaimed refrigerant and retrofit uses is the preferred approach and provides clarity for equipment with prohibited refrigerants that was installed before the date of prohibition. (AHRI, HARDI, Lennox)

Agency Response: Please see Agency Response to comment 7.

## D. State-by-State Efforts

10. Comment(s): A national approach is preferred. (AHRI, Emerson, HARDI, Lennox, Zero Zone)

Agency Response: CARB staff made no changes based on the received comment. Due to the recent decision in *Mexichem Fluor vs. EPA*, the national approach is impacted. In the absence of a national approach, CARB is acting to preserve what used to be national prohibitions in California because California has HFC emissions reductions targets under SB 1383, which must be met.

11. Comment(s): Federal requirements and international agreements provide the most effective way to reduce emissions of high-GWP refrigerants. Harmonized regulations across North America are more desirable and effective than individual countries or state-by-state efforts which could lead to inconsistent requirements between regions and added costs of compliance being passed to consumers. (AHRI)

Agency Response: CARB staff made no changes based on the received comment. This regulation is consistent with action around the globe. The Kigali Amendment has been ratified by more than 20 Parties, the necessary number to take effect in 2019, and other jurisdictions such as the European Union, Australia, Canada and Japan have passed their own HFC reduction requirements. Most of the affected industry serves a global market and are moving towards low-global warming potential (GWP) solutions, and many manufacturers and users in the United States have all already adopted lower-GWP technologies. Taking action in California prevents market disruption, provides certainty for industry and avoids stranding investments for industries that have invested heavily in developing low-GWP technologies and bringing these technologies to market.

12. Comment(s): Individual state regulations on allowable refrigerants will make it difficult for manufacturers to comply and raise the cost of equipment to end-users. Rather than upgrade a system they may continue to use older systems with high leak rates. A patchwork of state regulations will make it difficult for the United States to develop cohesive regulations to meet long term HFC reduction goals. (Zero Zone)

Agency Response: CARB staff made no changes based on the received comment. CARB addresses cost of compliance in the Staff Report and section II, C above. Please see Agency Response to comments 10 and 11.

## E. National and International Coordination

13. Comment(s): As CARB moves forward with the proposed regulation, and in future regulations, CARB should align as closely to the U.S. EPA SNAP Rules and section 608 as possible. (Chemours)



Agency Response: CARB staff made no changes based on the received comment. In the proposed action, CARB aligned as closely as possible with U.S. EPA SNAP Rules and considered modifications where appropriate for the successful adoption of a partially vacated federal rule in California.

14. Comment(s): CARB should create a framework by which CARB can easily amend the regulation to match future federal regulations regarding an HFC phase-down. CARB has not included any information on the future process for determining prohibited refrigerants beyond those listed in the proposed regulation. In order to comply and plan for future regulation, manufacturers need clarity on how California will continue to regulate HFC refrigerants in all end-uses. (AHRI, HARDI, Lennox, Structural Concepts)

Agency Response: CARB staff made no changes based on the received comment. If necessary, CARB could amend this regulation. An amendment is preferred because future action at the federal level is speculative. CARB understands industry's need for clarity in all end-uses. This regulation does not cover all end-uses but CARB will work with stakeholders when considering other end-uses.

15. Comment(s): CARB should remain flexible and consider alternate approaches or sunset provisions to allow for consistency with U.S. EPA if any action to phasedown HFCs occurs at the federal level. (CPI)

Agency Response: CARB staff made no changes based on the received comment. If necessary, CARB could amend this regulation. An amendment is preferred because future action at the federal level is speculative. Given the uncertainty as to the future federal framework, providing flexibility, such as a sunset provision, leaves room for unintended consequences and jeopardizes the expected emissions reductions associated with this rulemaking.

16. Comment(s): CARB should coordinate with any other States considering regulation or legislation to phasedown the use of HFCs to streamline U.S. manufacturing. (ACC, CPI)

Agency Response: CARB staff made no changes based on the received comment. This comment is outside the scope of this rulemaking. California does work with other states and is an active member of the U.S. Climate Alliance, a group of 16 states and Puerto Rico, who have committed to maintain the greenhouse gas reduction goals of the international Paris Agreement. HFCs are one of the greenhouse gas groups that have been included, which also include carbon dioxide, methane, and black carbon.

If a national HFC phasedown is adopted, CARB maintains that this regulation will in effect enhance and complement any national HFC phasedown, allowing the phasedown to work more effectively by minimizing market disruption. The initial HFC phasedown step of ten percent reduction in production and consumption would largely be met through the regulation's bans on certain HFCs in specific end-use sectors.

17. Comment(s): CARB should incorporate certain provisions of the Environment and Climate Change Canada (ECCC) final rule publishing in October 2017. (AHRI, Lennox, Structural Concepts)

Agency Response: CARB staff made no changes based on the received comment. The purpose of this regulation is to ensure these specific end-uses do not switch back to using high-GWP refrigerants in the short term in response to the recent court decision in *Mexichem Fluor v. EPA*. CARB will be engaging in a second rulemaking for additional HFC reduction measures and will work with stakeholders to consider various other models, including Canada's, to achieve the maximum HFC emissions reductions.

#### **F. Adopt U.S. EPA SNAP Rules in their Entirety**

18. Comment(s): CARB should adopt U.S. EPA SNAP Rules 20 and 21 in their entirety. (Chemours, Honeywell, Hudson)

Agency Response: CARB staff made no changes based on the received comment. This regulation focuses on commercial refrigeration equipment and foam end-uses with past and shortly upcoming compliance dates under U.S. EPA SNAP Rules 20 and 21. This rulemaking is meant to be a fast-acting solution to the risk of losing the emissions reductions expected in the near-term under the SNAP Rules.

19. Comment(s): CARB should expand the proposed regulation to include all foam applications covered by SNAP Rule 20 and 21. While CARB has indicated that applications with later dates will be included in future regulations, the industry needs certainty now to continue planning for future phase out dates. In the absence of certainty, there is significant risk that the industry will transition back to high-GWP HFCs. (Honeywell)

Agency Response: CARB staff made no changes based on the received comment. CARB is currently considering measures to address the remaining end-uses addressed through the U.S. EPA SNAP Rules 20 and 21. In addition, in the Short-Lived Climate Pollutant Strategy approved by the Board in 2017, CARB proposed setting GWP limits on HFC use and sales as key measures towards achieving the SB 1383 goals. CARB's future HFC rulemakings will take a more comprehensive approach and focus on implementing the Short-Lived Climate Pollutant Strategy.

20. Comment(s): CARB's proposed SNAP Replacement Rule does not provide comprehensive coverage of end-uses (notably with regard to air-conditioning) and treats substitute refrigerants inconsistently, prohibiting use of some HFCs while allowing continued use of others that have similar or higher GWPs. A more comprehensive approach could provide deeper real-world emission reductions at similar or lower cost. (Hudson)

Agency Response: CARB staff made no changes based on the received comment. Please see Agency Response to comment 19.

21. Comment(s): CARB should backstop the SNAP Rule 20 prohibition on HFC-134a in mobile air-conditioning for model year 2021. CARB should make the ban effective as soon as possible to deter carmakers from moving back to HFC-134a. (Chemours, Honeywell)

Agency Response: CARB staff made no changes based on the received comment. Please see Agency Response to comment 19.

22. Comment(s): CARB does not address the commercial and residential AC sectors, which are the largest and perhaps most emissive use sectors. These sectors continue to be served largely by HCFC-22, which has a lower GWP than most of the approved substitutes for HCFC-22. This is a critical time as higher-GWP HFCs will replace HCFC-22. Prohibiting the use of high-GWP HFC substitutes in all existing systems. This will help prevent increasing HFC emissions and ensure that the legacy refrigerant, HCFC-22, is properly managed. (Hudson)

Agency Response: CARB staff made no changes based on the received comment. Please see Agency Response to comment 19.

## **G. Recordkeeping**

23. Comment(s): The recordkeeping requirements are overly burdensome on manufacturers and will not help with enforcement of the regulation. (AHRI, CPI, Lennox, Zero Zone)

Agency Response: CARB staff made no changes based on the received comment. The recordkeeping requirements are necessary for proper enforcement of the regulation. The requirements include keeping records of sales and distribution of refrigeration equipment and foam. The record-keeping burden is minimal because these types of records are already maintained by equipment and foam system manufacturers.

24. Comment(s): Manufacturers often ship to a wholesaler or contractor instead of directly to the end-user. Since the manufacturer may not be selling directly to the end-user in California, the manufacturer may not have all the information CARB is requiring for recordkeeping. The manufacturer may not know the installation location or how the equipment will be used. As a result, the manufacturer may have no knowledge of the amount or type of the refrigerant used. Stakeholders requested clarification regarding the recordkeeping requirements. (AHRI, Rheem Manufacturing, Zero Zone)

Agency Response: CARB staff revised the recordkeeping requirements (see the 15-Day Notice posted on June 15, 2018) such that the information requested aligns with the information known to manufacturers and clarified that these requirements apply to manufacturers of new equipment.

25. Comment(s): Many businesses do not keep the statement and records that the regulation will now requires. Therefore, contrary to the Staff Report, there is a cost associated with keeping these records. (AHRI)

Agency Response: CARB staff revised the recordkeeping requirements (see the 15-Day Notice posted on June 15, 2018) such that the information requested aligns with the information known to manufacturers and clarified that these requirements apply to manufacturers only. Also, the recordkeeping requirement is now limited to “motor-bearing” refrigeration equipment which is defined to include compressors, condensers, and evaporators. CARB has met with many industry stakeholders and through conversations, has learned that most covered manufacturers keep the records CARB is proposing in the regulation as a standard business practice.

26. Comment(s): All documentation requirements will not be known for all equipment as some of these pieces are just components of the full system and will not individually contain all refrigerant and charge information. (AHRI)

Agency Response: CARB staff revised the recordkeeping requirements (see the 15-Day Notice posted on June 15, 2018) such that the information requested aligns with the information known to manufacturers and clarified that these requirements apply to “motor-bearing” refrigeration equipment which is defined to include compressors, condensers, and evaporators. It is understood that manufacturers do keep the information CARB is requesting as a standard business practice.

27. Comment(s): The recordkeeping requirements in the proposed regulations do not align with records that are currently retained by industry. Stakeholders recommend that CARB amend the recordkeeping requirements to allow manufacturers to retain records in accordance with their existing protocols. A three year recordkeeping requirement would be more aligned with current protocols. (Chemours, ACC, CPI, Honeywell)

Agency Response: CARB staff made no changes based on the received comment. For the purpose of enforcing the regulation, CARB is requiring records to be retained for five years to be made available on request by CARB. Industries may differ in their practices. The regulation as written provides consistency and fairness amongst all industries and provides an enforcement mechanism for failure to maintain these records.

28. Comment(s): The sales records that manufacturers keep is confidential business information and should not be required to be disclosed in any circumstances. Customer lists, market shares, and product selections are important proprietary business data. (AHRI)

Agency Response: CARB staff made no changes based on the received comment. CARB protects confidential business information according to CARB’s regulations (Cal. Code Regs., tit. 17, §§ 91000 to 91022), the California Public

Records Act (Cal. Gov. Code § 6250 et seq.), The Information Practices Act (Cal. Civil Code § 1798 et seq.), and to the extent permitted by other laws. CARB handles highly sensitive confidential information regularly through other programs and has experience maintaining the confidentiality of this specific type of information.

29. Comment(s): Creating a single point source for this information can be very harmful to all levels of product distributions and installation but particularly for overburdened small business interests. (AHRI)

Agency Response: CARB staff made no changes based on the received comment. Cost and small business interests are considered in the Staff Report and section II. C. above. This expense is reasonable compared to the environmental benefit.

#### Comments Made in the 15-Day Comment Period:

30. Comment(s): The recordkeeping requirements are not necessary. (AHRI)

Agency Response: CARB staff made no changes based on the received comment. The recordkeeping requirements are necessary for enforcement of the regulation. Necessity is addressed in the Staff Report.

31. Comment(s): The recordkeeping requirements should be eliminated to limit the burden on regulated entities. (AHRI, CPI, Hoshiazaki America, PIMA)

Agency Response: CARB staff made no changes based on the received comment. CARB staff could have requested additional mechanisms for compliance, such as annual reporting into an online tool or a labeling requirement. CARB staff have determined that requiring manufacturers to maintain records that most keep in the regular course of business for five years is the least burdensome approach. Please see Agency Response to comment 23.

32. Comment(s): The recordkeeping requirements are overly burdensome for sectors of the foam industry that have already transitioned away from HFC blowing agents included in Table 1 of Section 95374(a). (CPI, PIMA)

Agency Response: CARB staff made no changes based on the received comment. Please see Agency Response to comment 23.

33. Comment(s): As an alternative to a full exemption, PIMA request that the proposed regulation be further modified to allow foam industry that have already transitioned away from HFC blowing agents (i.e, polyiso insulation) to submit a one-time certification to CARB that their respective products do not contain the prohibited HFC substances. The certification also could be made at the request of, or at a time specified by CARB. (PIMA)

Agency Response: CARB staff made no changes based on the received comment. CARB considered this approach but declined to include it due to

the necessity of ensuring companies do not switch back to prohibited substances. Please see Agency Response to comment 23.

34. Comment(s): The model number, serial number, and date of manufacturer information requested is already available on the equipment's nameplate. With the serial number from the unit's nameplate, a manufacturer is able to identify the build date, product information requested by CARB's record retention policy. Requiring documentation for all of these fields will only duplicate work for information that is already available based on the unit nameplate.

Agency Response: CARB staff made no changes based on the received comment. CARB staff would not be able to access all the necessary information for enforcement by the serial or model number alone without additional information from the manufacture, which is why CARB is requiring recordkeeping. Please see Agency Response to comments 23, 27, 30, and 31.

35. Comment(s): Included in CARB's staff report, is the assumption that "affected businesses already keep all the records that will be required for the record-keeping provision, thus there is no additional recordkeeping cost." Many businesses do not keep the statements and records that this regulation will now require. (AHRI)

Agency Response: CARB staff made no changes based on the received comment. All costs are discussed in the Staff Report. Please see Agency Response to comment 12.

36. Comment(s): Many of the products that are manufactured do not reach California through the initial sale. These products instead enter into the market and are distributed geographically. It would be nearly impossible for a manufacturer to know where a distributor or even some retailers may eventually install the piece of equipment. The record retention requirements create undue administrative burden for manufacturers as the location of sale is unknown, imposing a universal requirement on many units that will never be sold in California. (AHRI, Hoshiazaki America, Hussman)

Agency Response: CARB staff made no changes based on the received comment. It is understood that manufacturers may sell equipment or foams to a distributor or end-users without knowing the final destination. However, industry has indicated to CARB that the final product destination is largely known to manufactures, for the end-uses regulated by this rulemaking.

37. Comment(s): All documentation requirements will also not be known for all equipment as some of these pieces are just components of the full system and will not individually contain all refrigerant and charge information. (Hoshiazaki America)

Agency Response: CARB staff made no changes based on the received comment. Regarding the refrigerant and charge size, CARB requires that manufacturers keep records of the type(s) of refrigerant the equipment is

designed to use (see Cal. Code Regs. tit. 17, § 95375 (C)(2)(F)) and that full charge capacity of the equipment, where available (see Cal. Code Regs. tit. 17, § 95375 (C)(2)(G)). CARB is requiring recordkeeping only for motor-bearing components, for which this information is generally known.

## H. Disclosure Statement

38. Comment(s): The disclosure statement is an unnecessary burden which does not help with enforcement. CARB should remove the disclosure from the proposed regulations. (ACC, CPI, Zero Zone)

Agency Response: CARB made changes by removing the disclosure statement requirement for foam end-uses as the foam end-uses affected by this regulation have already transitioned away from HFCs (see the 15-Day Notice posted on June 15, 2018).

For refrigerant end-uses, the disclosure requirement is necessary as these end-uses have not transitioned away from HFCs. The disclosure requirement was further revised in the 15-Day Notice to require that the disclosure statement remain with the equipment while the equipment is in use in California. In addition, the disclosure requirement was revised such that the language does not refer to what substances are “designed for use” in the equipment but rather that the equipment is “prohibited from use in California with any refrigerants on the “List of Prohibited Substances” for that specific end-use”. This is important because compliance is not possible unless the end-user knows that the refrigerant is allowable under California regulations. Similarly, the disclosure requirement helps the manufacturer and all distributors of the equipment or product comply with the regulation by clearly indicating that the product is allowable for use in California.

39. Comment(s): If CARB does not remove the disclosure requirement, CARB should allow for a shorter, more generic disclosure statement (AHRI, CPI, ICF).

AHRI proposed revised language for the disclosure statement:  
*"This equipment complies with California Code #####."*

CPI proposed revised language for the disclosure statement:  
*~~"The blowing agent in this foam system is a compliant California-compliant blowing agent in accordance with California Code of Regulations, title 17, section 95374. This disclosures statement has been reviewed and approved by [THE COMPANY] and [THE COMPANY] attests, under penalty of perjury, that these statements are true and accurate."~~*

Agency Response: CARB staff made changes to the disclosure statement to facilitate clarity and understanding. The remainder of the text was determined to be necessary for implementation of the regulatory requirements. The modified text now states:

*“This equipment is prohibited from use in California with any refrigerants on the “List of Prohibited Substances” for that specific end-use, in accordance with California Code of Regulations, title 17, section 95374. This disclosure statement has been reviewed and approved by [THE COMPANY] and [THE COMPANY] attests, under penalty of perjury, that these statements are true and accurate.”*

40. Comment(s): The second sentence of the proposed disclosure statement, as written, does not provide CARB ability to enforce the regulations. Any statements on invoices should always be considered reviewed, approved, true and accurate by CARB and the consumer. Further, penalties can be applied for either not complying or misrepresenting compliance with regulations even if not disclosed on the invoice. (ACC, AHRI, CPI)

Agency Response: CARB staff made no changes based on the received comment. While CARB agrees it would be a violation of state law for a company to misrepresent compliance with state regulations, the provision in this regulation is necessary to require the company to confirm the accuracy and that there be some consequence for non-compliance, which supports the integrity of the program.

41. Comment(s): Invoices typically go to purchasing agents or clerks. Engineers and technicians involved with charging refrigeration systems will not see this information. It is a waste of resources to include the disclosure statement on an invoice. (Zero Zone)

Agency Response: CARB staff made no changes based on the received comment. CARB disagrees with this comment as the disclosure statement is an important tool to inform the ultimate purchaser and to enforce the regulation.

42. Comment(s): There are also issues with the disclosure statement as written. The term "may be used" is confusing. (Zero Zone)

Agency Response: CARB staff made changes to the disclosure statement to remove this language. Please see Agency Response to comment 38.

43. Comment(s): Manufacturers of remote refrigerated components cannot control what the customer eventually uses in their system. (Zero Zone)

Agency Response: CARB staff revised the requirements (see the 15-Day Notice posted on June 15, 2018) such that it is clear that the regulatory requirements apply to manufacturers only and that the requirements are now limited to “motor-bearing” refrigeration equipment which is defined to include compressors, condensers, and evaporators. In addition, CARB staff revised the requirements such that the refrigerant and full charge capacity of the equipment must only be recorded as a part of recordkeeping when this information is available. Further, the disclosure requirement was revised such that the language does not refer to what substances are “designed for use” in the equipment but rather that the equipment is “prohibited from use” in California with any refrigerants on the “List



of Prohibited Substances” for that specific end-use. The purpose of the disclosure requirement is to disclose to the end-user that they may not use substances which are listed as prohibited in California in their equipment if the substances is listed as prohibited for that equipment type.

44. Comment(s): There is no known way that equipment can be designed solely for use with the approved refrigerants. (Zero Zone)

Agency Response: CARB staff made no changes based on the received comment. Some equipment only takes certain types of refrigerants. The disclosure statement is meant to notify the end-user that the equipment must not be charged with a substance on the list of prohibited substances.

45. Comment(s): Manufacturers should not be held liable for the actions of end-users if they choose to use an unapproved refrigerant. (Zero Zone)

Agency Response: CARB staff made no changes based on the received comment. Manufacturers are liable for actions taken by the manufacturer, not the end-user.

46. Comment(s): For California's unique requirements, the manufacturer may choose to simply apply a sticker to be mailed out on the invoice. The electronic file will not have a disclosure statement. This has implications for recordkeeping. (Zero Zone)

Agency Response: CARB staff made no changes based on the received comment. If a manufacturer chose this route of compliance, the manufacturer would need to make sure the records accurately reflect compliance with the regulation, otherwise this could be a violation of the requirements.

47. Comment(s): Including multiple disclosures on a product’s invoice could become problematic if additional authorities regulate the use of HFCs in the foam sector. Allowing for a more generic disclosure statement will allow manufacturers to only include a single disclosure statement on their invoices should other jurisdictions include a similar requirement. (ACC)

Agency Response: CARB made changes by removing the disclosure statement requirement for foam end-uses as the foam end-uses affected by this regulation have already transitioned away from HFCs (see the 15-Day Notice posted on June 15, 2018). Please see Agency Response to comment 32.

#### Comments Made in the 15-Day Comment Period:

48. Comment(s): It is not practicable to ascertain which and whether the product will eventually end up in the California market. A requirement to provide specific information on the products for a single state would be overly burdensome for manufacturers. (AHRI)

Agency Response: CARB staff made no changes based on the received comment. Please see Agency Response to comments 36 and 38.

49. Comment(s): If CARB determines that the disclosures statement is necessary, the statement is unnecessarily long. The last sentence should be removed because it is problematic, and to shorten the disclosure statement. The attestation may have been applicable to the “designed for use” declaration in the 45-day language; however, the revised language “prohibited from use” does not necessitate a verification of accuracy. (AHRI, Heat Transfer Products)

*“This equipment is prohibited from use in California with any refrigerants on the “List of Prohibited Substances” for that specific end-use, in accordance with California Code of Regulations, title 17, section 95374. ~~This disclosure statement has been reviewed and approved by [THE COMPANY] and [THE COMPANY] attests, under penalty of perjury, that these statements are true and accurate.~~”*

Agency Response: CARB staff made no changes based on the received comment. Please see Agency Response to comment 39.

50. Comment(s): AHRI seeks clarification on whether this disclosure statement is in fact a requirement for a label on the motor-bearing equipment. If the requirement is a label, then manufacturers will be required to produce California-specific labels. The process will be inefficient, increase the cost of manufacturing, and cause customer confusion if other states adopt a similar approach but specify labeling requirements that are different from those specified by CARB. (AHRI)

Agency Response: CARB staff made no changes based on the received comment. The regulatory text provides flexibility to the manufacturer to determine the method of complying with the disclosure requirement (e.g. on an invoice or label) to meet the requirements set in section 95375(c)(1). Industry could do either.

51. Comment(s): In lieu of a written disclosure statement, add a visible label affixed adjacent to the nameplate (dataplate) whereby the purchaser is made aware of the importance of selecting a substance not listed by the state of California in Table 1 (for a specific end use). This visible label would declare the same information as in the proposed disclosure statement. By using this recommendation both the manufacturer and the purchaser have the necessary information prohibiting the use of any chemical substance being proposed for exclusion in California. (Heat Transfer Products Group)

Agency Response: CARB staff made no changes based on the received comment. Please see Agency Response to comment 50.

52. Comment(s): As an alternate means of compliance, listing equipment refrigerant information on the manufacturer’s website, or in an online database may be more efficient. This approach will allow for manufacturers, distributors, end-users, and code officials to locate information pertaining to any unit with a model number or

serial number, based on date of manufacture, which is located directly on the equipment nameplate. (AHRI)

Agency Response: CARB staff made no changes based on the received comment. CARB staff have determined that a disclosure statement is the least burdensome approach and ensures that the buyer has the necessary information without referring to a secondary source.

Office of Administrative Law Comment(s):

53. Comment(s): Clarify the necessity for including “penalty or perjury” in section 95375(c)(1)(A).

Agency Response. This provision is necessary to ensure companies engage in due diligence to ensure accurate information. This is important for both implementation and enforcement of the regulation as important resources are wasted trying to assess the accuracy of records when they contain inaccurate information. Often times the assessment occurs much later in time when finding the accurate information is difficult or nonexistent, adding a layer of difficulty and burden on both the company and the agency. Reviewing accuracy at the time the record is created is easier and less resource intense.

**I. List of Acceptable and Prohibited Substances**

54. Comment(s): There is no reference to how California will determine or acknowledge acceptable refrigerants. CARB should provide guidance as to what substances are acceptable. CARB should clarify the process for managing and regulating the use of acceptable HFC refrigerants. (AHRI, Emerson, Lennox, Structural Concepts)

Agency Response: CARB staff made no changes based on the received comment. California will defer to the U.S. EPA list of acceptable alternatives, which is still in place. U.S. EPA has a process for approvals which includes a comparative risk framework. Although CARB has authority to list acceptable alternatives, at this point in time, CARB does not conduct its own comparative risk analysis of alternative substances and will not duplicate U.S. EPA’s efforts. CARB has revised the disclosure requirements in § 95375(c)(1) because as originally proposed, it may have provided stakeholders with the incorrect impression that California is maintaining a separate list of California approved substances by referring to the use of “California compliant” substances. At this time, CARB is not maintaining a separate list and will rely on U.S. EPA’s list.

55. Comment(s): CARB should acknowledge and abide by the U.S. EPA’s SNAP listing process. CARB should state that all U.S. EPA approved refrigerants will remain so in California, unless expressly prohibited. (AHRI, Lennox)

Agency Response: CARB staff made no changes based on the received comment. Please see Agency Response to comment 54.

56. Comment(s): CARB should provide a list of EPA acceptable alternative refrigerants for each end-use. (Emerson)

Agency Response: CARB staff made no changes based on the received comment. Please see Agency Response to comment 54.

57. Comment(s): CARB should amend its refrigerant regulation to allow for the use of R-448A, R-449A, and R-449B in stand-alone medium-temperature applications. (AHRI, Lennox)

Agency Response: CARB staff made no changes based on the received comment. Please see Agency Response to comment 54.

58. Comment(s): CARB should petition U.S. EPA SNAP to have R-448A, R-449A and R-449B added to the acceptable alternatives list for all stand-alone equipment and vending machines. (Emerson)

Agency Response: CARB staff made no changes based on the received comment as it is outside the scope of the regulation.

59. Comment(s): CARB has not included any information on the future process for determining prohibited refrigerants beyond those listed in Appendix A of the proposed regulation. In order to comply and plan for future regulation, manufacturers need clarity on how California will continue to regulate HFC refrigerants in all end-uses. (AHRI)

Agency Response: CARB staff made no changes based on the received comment. Prohibition of other substances not contained in the current list is beyond the scope of this regulation. CARB plans to adopt additional HFC measures and will follow its rulemaking process and the requirements as specified in the California Administrative Procedures Act to adopt any future regulations.

## **J. Definition of New Equipment**

60. Comment(s): Chemours recommended CARB maintain a clear definition of “new equipment” consistent with U.S. EPA, to include not only new store installations, but any equipment installation in an existing store that increases the system capacity (i.e., greater number of cases, addition of a compressor, increase in compressor capacity, higher refrigerant charge size in the system, etc.). If a change is made to a store that meets this definition of “new equipment”, the system should then be converted to a lower-GWP alternative. (Chemours)

Agency Response: In response to stakeholder comments, CARB has revised section 95373(a)(2)(i) of the definition of “new refrigeration equipment” such that the equipment is defined as new if the “capacity” of the system instead of the “charge” of the system is increased. This definition is consistent with U.S. EPA, which reclassifies systems as new if a modification is made, which increases the capacity of the system. CARB did not revise section 95373(a)(2)(ii) of the

definition because this provision is to prevent existing refrigeration systems from undergoing extensive repairs to the extent that they become a de facto new piece of equipment with a few older parts remaining—a scenario that could occur for an end-user to avoid the regulations covering new equipment.

61. Comment(s): CARB should revise the part (2)(i) and delete part (2)(ii) of the definition of “new refrigeration equipment” to be consistent with the U.S. EPA. The current definition is not only problematic and difficult to enforce, but will cause confusion.

Agency Response: CARB staff revised the definition of “new refrigeration equipment.” Please see Agency Response to comment 60.

62. Comment(s): Customers should be able to repair, update and improve their systems without it being reclassified as new.

Agency Response: CARB staff revised the definition of “new refrigeration equipment.” Customers are able to repair, update, and improve their systems. For the legal requirements, customers should review the regulatory requirements. Please see Agency Response to comment 60.

63. Comment(s): The definition mentions increasing charge size, but an “increase” is not defined. With an arbitrary charge increase absent a measurement, fixing or updating a component of a system could require a whole new system and refrigerant to be used.

Agency Response: CARB staff made no changes based on the received comment. The definition is sufficiently clear without adding additional definitions. Please see Agency response to comment 60.

64. Comment(s): CARB should add a definition for “repair” and use U.S. EPA’s definition found in 40 CFR 82.152. Repaired systems should be able to continue to use the delisted refrigerants. As written, there will be serious confusion when repairs are made not knowing the future operation of the equipment. (AHRI, Lennox, Zero Zone)

Agency Response: CARB staff made no changes based on the received comment. The definition is sufficiently clear without adding additional definitions. Please see Agency response to comment 60.

65. Comment(s): Zero Zone also requested clarification regarding the following examples:

- a. Customers have purchased racks with excess compressor capacity with plans for future additions to their stores. Will that be considered a new expanded system? They should not be required to change refrigerants when they utilize the extra compressor capacity.

- b. Customers may also want to add one or two refrigerated fixtures to their stores and the equipment will use more refrigerant. The contractor may not need to add charge and just allow the receiver to operate at a lower level. Would that be considered a new expanded system?
- c. Customers may also want to change out older less efficient equipment with new lower charge less energy consuming equipment. They may be able to remove three existing pieces of equipment and replace them with five new pieces of equipment. Would that change be considered a new expanded system?

Agency Response: CARB staff made no changes based on the received comments. The regulatory text is sufficiently clear to answer these questions. In the scenarios listed above from Zero Zone, CARB's response is as follows:

- a. The customer is not adding capacity, but using existing capacity. As such, it would not be considered "new."
- b. Under the revised definition, the answer to this question depends on whether the capacity of the system is increased to accommodate additional cooling load. The system would not be considered new just because the charge increased unless the capacity of the system was also increased as in part (2)(i) or the cost of replacing components met the definition of new equipment under (2)(ii). However, if the capacity of the system increased as in part (2)(i) or the cost met part (2)(ii), then yes this equipment would meet the definition of "new."
- c. See answer to b. above.

Comments Regarding Changes Made in the 15-Day Period:

66. Comment(s): The regulation's definition of "New Refrigeration Equipment" is problematic. CARB should provide clarification and certainty that a minor adjustment to a system will not be captured in the definition of "new refrigeration equipment", requiring a costly new system or refrigerant change. Clarification should be added which would allow retailers to purchase newer and more efficient product (i.e, replace old display cases) without replacing an entire system. (AHRI, Hussmann)

AHRI recommended the following clarification: *"New Refrigerant Equipment" means (1) Any refrigeration equipment that is first installed using new or used components; or (2) Any refrigeration equipment that is modified such that it is: (i) Expanded after the date at which this subarticle becomes effective, to handle and expanded cooling load by the addition of components in which the compressor or rack capacity of the system is increased, including refrigerant lines, evaporators, compressors, condensers, and other components; or (ii) Replaced or cumulatively replaced after the date at which this subarticle becomes effective, such that the capital cost of replacing or cumulatively replacing components*

*exceeds 50 percent of the capital cost of replacing the entire refrigeration system.”*

CARB should also add a definition for “capacity increase” to mean “*an increase in the compressor cooling power through the addition of compressors or changing out existing compressors for larger units.*”

(AHRI)

Agency Response: CARB staff already revised the definition of “new refrigeration equipment.” The intent of the definition is to restrict the type of expansion which causes existing equipment to be classified as new to expansion of the “cooling load”. It is widely understood that expanding the cooling load involves expanding the compressor capacity. Therefore, further edits provided by AHRI are not necessary. Please see Agency Response to comment 60.

#### **K. Manufacture Date**

67. Comment(s): Equipment manufactured before the date of enforcement should be allowed to enter the marketplace and be installed. This needs to be clarified. (AHRI, Lennox)

Agency Response: It was CARB’s intent for the prohibition date to refer to the date of manufacture consistent with U.S. EPA SNAP. CARB has revised the requirements to make it clear that if a piece of equipment or a foam system (which uses a substance prohibited in Attachment A) was manufactured before the effective date, it can be installed and used in California. No installation or sell-through date limits are placed on equipment or foam manufactured prior to the effective prohibition date.

#### **L. Reclaim, Recycle, and Destruction**

68. Comment(s): Reclaimed refrigerant should be an essential part of CARB's strategy to reduce HFC emissions. (AHRI, EIA, Chemours, Hudson, Lennox)

Agency Response: CARB staff made no changes based on the received comment. This comment is outside the scope of this rulemaking. The purpose of this regulation is to prohibit certain HFCs in designated new end-uses and to backstop the federal rollback of the SNAP rules in California.

69. Comment(s): CARB should make publicly available the top line data on aggregate amounts of HFC refrigerants reported annually through the Refrigerant Management Program (RMP) as recovered, reclaimed, and destroyed. (EIA)

Agency Response: CARB staff made no changes based on the received comment. This comment is outside the scope of this rulemaking.

70. Comment(s): CARB should address refrigerant banks and consider potential measures to increase recovery, reclamation, and destruction to accompany the

ban on sale of virgin high-GWP refrigerant that is already under consideration.  
(EIA)

Agency Response: CARB staff made no changes based on the received comment. This comment is outside the scope of this rulemaking. U.S. EPA did not exempt recycled refrigerants if the refrigerant is listed as unacceptable in new equipment, and CARB is aligning with U.S. EPA. In future rulemaking, CARB will take under consideration potential measures to increase recovery, reclamation, and destruction of refrigerants in existing banks (installed amount of refrigerant currently used in equipment).

71. Comment(s): In the proposed regulation and any subsequent SNAP-type rules, CARB should prohibit the use of previously approved HFC substitutes in existing equipment. This will incentivize the use of reclaimed refrigerants for such equipment, which will reduce use of higher-GWP substitutes, minimize the need for additional virgin production and significantly reduce venting and emissions.  
(Hudson)

Agency Response: CARB staff made no changes based on the received comment. This comment is outside the scope of this rulemaking, which is meant to be a fast-acting solution to the risk of losing the emissions reductions expected in the near-term under the U.S. SNAP Rules. Prohibitions beyond what were included in the U.S. SNAP Rules will be considered as a part of future rulemaking.

72. Comment(s): We encourage CARB to explicitly recognize reclaimed refrigerants as low or zero GWP alternatives for purposes of regulatory policy and analysis.  
(Hudson)

Agency Response: CARB staff made no changes based on the received comment. This comment is outside the scope of this rulemaking.

73. Comment(s): CARB's goal should be to minimize the need for production of additional virgin gas and to ensure the gas in the installed base is properly managed, reclaimed and reused. CARB should focus its regulatory efforts on policies that will more effectively promote its goal of reducing emissions—specifically, a phase-out in sales of high-GWP HFCs with a clear exemption for reclaimed refrigerants and a robust suite of additional policies to encourage use of reclaimed refrigerants. Such policies would incentivize better refrigerant management, reduce emissions and venting, and help to support the transition to new, lower-GWP equipment by giving economic value to legacy refrigerant. (Hudson)

Agency Response: CARB staff made no changes based on the received comment. This comment is outside the scope of this rulemaking.

74. Comment(s): CARB should adopt a recycled-content requirement for bulk refrigerant sold in California. (Hudson)



Agency Response: CARB staff made no changes based on the received comment. This comment is outside the scope of this rulemaking.

75. Comment(s): CARB should leverage California's procurement policy to incentivize the use of reclaimed refrigerants to service existing state-owned or managed systems. (Hudson)

Agency Response: CARB staff made no changes based on the received comment. This comment is outside the scope of this rulemaking.

76. Comment(s): CARB should prohibit the use of previously approved HFC substitutes in existing equipment. This will incentivize the use of reclaimed refrigerants for such equipment, which will reduce use of higher-GWP substitutes, minimize the need for additional virgin production and significantly reduce venting and emissions. (Hudson)

Agency Response: CARB staff made no changes based on the received comment. This comment is outside the scope of this rulemaking.

77. Comment(s): CARB should adopt the American Carbon Registry's HFC protocol for reclaimed HFC refrigerants. CARB should recognize reclaimed refrigerants as low or zero GWP alternatives. (Hudson)

Agency Response: CARB staff made no changes based on the received comment. This comment is outside the scope of this rulemaking.

78. Comment(s): The energy used to reclaim refrigerant is significantly less than the energy needed to manufacture a new HFC. Thus, increasing the quantity of refrigerant that is recovered and reclaimed will provide a considerable and corresponding reduction in indirect emissions resulting from the production process. (Hudson)

Agency Response: CARB staff made no changes based on the received comment. This comment is outside the scope of this rulemaking.

## **M. Stand-Alone Equipment**

79. Comment(s): Use January 1, 2020 as the prohibition dates across all stand-alone equipment. (Emerson)

Agency Response: CARB staff made no changes based on the received comment. There is no reason to extend the prohibition date due to the availability of substitutes.

80. Comment(s): The prohibition on R-404A should be delayed one year for stand-alone equipment. This delay would allow the U.S. EPA the opportunity to approve an acceptable alternative such as R-448A and R-449A and R-449B. No acceptable refrigerant is currently identified for R-404A. CARB should amend its refrigerant regulation to allow for the use of R-448A and R-449A and R-449B in

stand-alone medium-temperature applications. Further, without provisions to use these refrigerants, it will force stand-alone medium temperature refrigerated equipment above 8000 Btu per hour to be sold as remote condensing cases in California. This will limit the customer base and also lead to increase leakage rates of higher-GWP refrigerants as remote installations have inherently larger charges and are more susceptible to leaks. (AHRI, Lennox, Structural Concepts)

Agency Response: CARB staff made no changes based on the received comment. There is no reason to extend the prohibition date due to the availability of substitutes. Existing units are still allowed to use R-404A and there are manufacturers who have switched to hydrocarbons for this end-use and made the transition on time. Medium-temperature stand-alone units can use propane or HFO-HFC blends including R-450A and R-513A, which have been listed as acceptable by U.S. EPA.

## **N. Vending Machines**

81. Comment(s): The vending machine industry is committed to a transition away from HFCs but there are major issues with CARB's approach. Request an extension of the compliance date for vending machines to January 2022. This date aligns with the date the industry has requested from the U.S. EPA for transition at the federal level to comply with SNAP and the European Union ban on refrigerants with a GWP over 150. (NAMA/CVAC)

Agency Response: CARB staff made no changes based on the received comment. Alternatives are available today for use in this industry. The industry has been aware of pending prohibitions since well before 2015. Propane vending machines are approved for use, although it is understood propane vending machines are not allowed in locations such as hallways and lobbies which are considered areas of ingress and egress. It is understood that propane is the preferred alternatives for a global line of vending machines mainly because the European Union's F-Gas regulation would prohibits refrigerants with a GWP above 150 in vending machines in 2022. A codes and standards committee has convened to address the location restrictions on vending machines with propane. However, there are alternatives that can be used in vending machines in California which are not restricted by area. HFO-HFC blends (R-450A and R-513A) are approved for use in this application. The HFO-HFC blends are considered near drop-in alternatives, although it is understood some redesign may be required. There are currently at least four manufacturers that make compressors that are rated for at least one of the replacement HFO-HFC blends.

82. Comment(s): Use January 1, 2020 as the prohibition for vending machines. (Emerson)

Agency Response: CARB staff made no changes based on the received comment. Please see Agency Response to comment 81.

## O. Foams

83. Comment(s): Expand the proposed regulation to include all foam applications covered by SNAP Rule 20 and 21. While CARB has indicated that applications with later dates will be included in future regulations, the industry needs certainty now to continue planning for future phase out dates. In the absence of certainty, there is significant risk that the industry will transition back to high-GWP HFCs. (Honeywell)

Agency Response: CARB staff made no changes based on the received comment. This rulemaking is meant to be a fast-acting solution to the risk of losing the emissions reductions expected in the near-term under the SNAP Rules. CARB is currently considering measures to address the remaining end-uses addressed through the U.S. EPA SNAP Rules 20 and 21. In addition, in the Short-Lived Climate Pollutant Strategy approved by the Board in 2017, CARB proposed setting GWP limits on HFC use and sales as key measures towards achieving the SB 1383 goals. CARB's future HFC rulemakings will take a more comprehensive approach and focus on implementing the Short-Lived Climate Pollutant Strategy.

84. Comment(s): CARB should clarify the rules regarding foams. It should be made clear that only foam that is manufactured in California falls under these regulations. Foam that is inside a piece of equipment manufactured in another state would not fall under these requirements. (Zero Zone)

Agency Response: CARB staff made no changes based on the received comment. The regulatory text is clear that all foams entering California are subject to the regulations, not just foam manufactured in California.

## P. Aerosols

85. Comment(s): CARB should include all aerosol propellants end-use covered by U.S. EPA SNAP Rule 20 in this proposed regulation. Delaying action on aerosols would likely result in most aerosol product manufacturers reverting to using HFC-134a, immediately increasing annual HFC emissions in California by as much as 1-2 MMTCO<sub>2</sub>E. California's Consumer Product Regulation does not cover all aerosols end-uses covered by SNAP Rules 20 and 21. While CARB has indicated that applications that were targeted for later dates will be included in future CARB regulations, the industry needs certainty now to continue planning for future phase out dates. (Honeywell)

Agency Response: CARB staff made no changes based on the received comment. The California Consumer Products regulation prohibits HFCs in consumer product aerosols with GWP values above 150. Stakeholder comment has brought to CARB's attention that there are aerosol end-uses that were covered by SNAP but not by the California Consumer Products regulation and that these end-uses are at risk of reverting back to HFC-134a. These aerosol propellant end-uses are: tire inflators, party string, disinfectant spray, mine warning devices, smoke detector functionality testing, personal care products,

and rust/corrosion inhibitors that are not lubricants. CARB will evaluate the remaining end-use categories not covered under existing CARB rules and these end-uses may be covered by future CARB rulemakings.

86. Comment(s): CARB should add a similar enforcement provision for the aerosol sector to the one that CARB has already issued for the foam sector. (Honeywell)

Agency Response: CARB staff made no changes based on the received comment. Please see Agency Response to comment 85.

#### **Q. Mobile Vehicle Air-Conditioning (MVAC)**

87. Comment(s): It would be better to phase out HFC 134a in MVAC now. (Honeywell)

Agency Response: CARB staff made no changes based on the received comment. CARB may take MVAC into consideration in future rulemakings but needs to work through some of the complexities surrounding this end-use.

88. Comment(s): CARB should plan for future phase out of HFC-134a in mobile air-conditioning as near to model year (MY) 2021 as possible. Automakers are transitioning to low-GWP solutions in this application, owing in no small part to EPA's SNAP 20 phase out date for HFC-134a in mobile air-conditioning. (Chemours, Honeywell)

Agency Response: CARB staff made no changes based on the received comment. Please see Agency Response to comment 87.

89. Comment(s): If it is CARB's strategy to exclude MVAC from this rulemaking because the strategy is to drive a conversion to low-GWP refrigerants through the "Clean Car Program," then CARB should discuss the incentives to be offered under this program to ensure this strategy will be successful. (Chemours, Honeywell)

Agency Response: CARB staff made no changes based on the received comment. Please see Agency Response to comment 87.

#### **R. Technician Training**

90. Comment(s): Training and service requirements for technicians need to be an important consideration/component of any refrigerant prohibitions. (AHRI)

Agency Response: CARB staff made no changes based on the received comment. Technician training and service requirements for technicians were considered as a part of U.S. EPA's process for developing SNAP Rules 20 and 21. The proposed regulation is intended to be a fast-acting measure to prevent backsliding for end-uses with past or upcoming compliance dates under U.S. EPA SNAP Rules 20 and 21. As such, CARB limited the scope of this regulation

to the adoption of prohibitions which were existing federal law and added enforcement mechanisms for California.

91. Comment(s): CARB should require refresher training for California service technicians so they become familiar with handling mildly flammable refrigerants like HFO-1234yf.

Agency Response: CARB staff made no changes based on the received comment. Please see Agency Response to comment 90.

## **S. Leak Rates**

92. Comment(s): Dentons urges CARB to correct Appendix B with respect to leak rates for stand-alone refrigeration units. The loss rate should be at least an order of magnitude higher. Dentons expects this correction will actually increase the expected reductions from the proposed regulation. (Dentons)

Agency Response: CARB staff made no changes based on the received comment. CARB consulted U.S. EPA literature and recommends aligning the CARB estimated leak rate with that used by U.S. EPA, which is cited as "< 1%". (Data source: Transitioning to Low-GWP Alternatives in Commercial Refrigeration," U.S. EPA Report EPA-430-F-16-073 December 2016). However, CARB staff will continue to look into additional data sources to refine estimates in future inventory updates.

## **T. Codes and Standards**

93. Comment(s): CARB needs to consider codes and standards. (UTC-Carrier)

Agency Response: CARB staff made no changes based on the received comment. CARB has considered relevant codes and standards in drafting this regulation and determined that alternative substances are available that do not conflict with codes and standards.

## **U. Formatting**

94. Comment(s): Table 1 in the proposed regulatory language contains the key definitions which describe the applicability. Those definitions would be more clear and understandable if the table included a heading for rules affecting the refrigerants used and another for rules affecting foam blowing agents. (Dentons)

Agency Response: CARB modified the text by adding a heading in Table 1, § 95374 of Attachment A for prohibitions affecting refrigeration end-uses and another for prohibitions affecting foam end-uses (see the 15-Day Notice posted on June 15, 2018).

## V. Stakeholder Involvement

95. Comment(s): CARB should use processes that insure direct stakeholder involvement and consensus where ever possible. (Lennox)

Agency Response: CARB staff made no changes based on the received comment. Consistent with Government Code sections 11346, subdivision (b), and 11346.45, subdivision (a), and with the Board's long-standing practice, CARB conducted public outreach and stakeholder engagements as a part of this rulemaking. CARB has worked closely for the past eight years with the regulated entities, many of which are subject to California's Refrigerant Management Program that was approved by the Board in December 2009. CARB held two public workshops to announce and discuss the proposed regulation. Information about the proposed regulation and workshops were sent to multiple CARB listserves which are subscribed to by thousands of stakeholders. In addition, CARB held numerous in-person and teleconference meetings with interested stakeholders.

Any reference to future rulemakings is outside the scope of this rulemaking. CARB will continue working with stakeholders to implement this regulation and in developing future regulations.

96. Comment(s): Chemours supports CARB's proposed action in this rulemaking, provided there has been sufficient consideration of stakeholder feedback. (Chemours)

Agency Response: CARB staff made no changes based on the received comment. Please see Agency Response to comment 95.

97. Comment(s): Any new measures and modifications made to SNAP Rules and Section 608 prohibitions adopted in California should include an evaluation with the diverse stakeholders participating in the affected supply chains to insure that CARB's measures can be successfully met and will not significantly shift the burden to other industries. Chemours recommends that to minimize disruption, CARB only consider modifications for narrow subsectors for strong technical justification. (Chemours)

Agency Response: CARB staff made no changes based on the received comment. Please see Agency Response to comment 95.

## W. High Glide Refrigerants

98. Comment(s): Chemical companies are pressing for an early removal of R-404A and R-507A refrigerants but manufacturers and end-users are not prepared for the change to high glide refrigerants [refrigerant blends that separate easily into their individual compounds due to different vapor pressures]. Request that CARB postpone the implementation of the regulations until July 1, 2019. This will allow the U.S. EPA to determine a new method to regulate these refrigerants (high

glide) and allow the industry to gain knowledge on the optimized use of these refrigerants. (Zero Zone)

Agency Response: CARB staff made no changes based on the received comment. Prohibition dates listed in the U.S. EPA SNAP rules concerning unacceptable refrigerants in specific end-uses were arrived at in a public rulemaking process that was national in scope. CARB intends to maintain consistency with the prohibition dates set by the U.S. EPA. Allowable refrigerants have been approved for use in equipment that previously used R-404A and R-507, and many units using the “high-glide” substitutes are currently operating in the United States.

## **X. Refrigerant Prohibitions - Stranded Assets**

99. Comment(s): Any ban that does not exempt reclaimed product will leave stranded all existing equipment that relies on a banned refrigerant. CARB should issue guidance for servicing working equipment. If a refrigerated unit is currently using an HFC refrigerant and needs servicing, will that require the owner to replace all of the refrigerant used in the unit and possibly the unit itself if not approved replacements can be used? (AHRI, Lennox)

Agency Response: CARB staff made no changes based on the received comment. As listed in Table 1 of Attachment A, the prohibitions are for new and retrofit refrigeration equipment and foam systems. The prohibitions do not apply to existing equipment or foam systems. Existing equipment manufactured before the prohibition dates (for new equipment) can still be serviced by listed refrigerants. For example, under this regulation, a refrigeration system using R-404A refrigerant in equipment manufactured prior to the prohibition date can continue to use R-404A throughout the lifetime of the equipment.

Additionally, this regulation does not prohibit the continued manufacture of any refrigerant listed as prohibited for a specific end-use; the refrigerant may still be used in all end-uses where the refrigerant is listed as acceptable.

## **Y. Exemption for Military and Space- and Aeronautics Related End-uses**

### Office of Administrative Law Comment(s):

100. Comment(s). Clarify what “reasonable efforts” mean in section 95375(b).

Agency Response. Each application will be analyzed on a case-by-case basis and the demonstration of reasonableness required to satisfy the military and space- and aeronautics exceptions could vary. An example of what an adequate demonstration of “reasonable efforts” make look like is if a company submitted the following information: (1) the process or product in which the substitute is needed; (2) the substitutes examined and rejected; (3) the reason for rejection of other alternatives, e.g., performance, technical or safety standards; and/or (4) the anticipated date other substitutes will be available and projected time for switching.

## Z. Comments Beyond the Scope of this Rulemaking

CARB staff made no changes based on the comments received below. These comments are outside the scope of this rulemaking, irrelevant, or not specifically directed at CARB's proposed action or to the procedures followed by CARB in proposing or adopting the action, therefore, CARB is not required to respond.

101. Comment(s): With respect to other refrigeration and air-conditioning applications, we (Honeywell) understand that it is Staff's intention to include HFC prohibitions in later rulemaking actions that will implement the measures proposed in the Short-Lived Climate Pollutant Strategy. We generally support those efforts, but offer comments on future actions. (See public comment letter from Honeywell, posted March 15, 2018)
102. Comment(s): High-GWP Emissions from transportation are largely from mobile vehicle air-conditioning (MVAC). As MVAC credit programs are implemented under California and U.S. EPA light-duty GHG emission standards, and as the MVAC leakage standards are implemented under their heavy-duty vehicle GHG emission standards, the share of F-gas emission from the transportation sector will decline. However, we believe that California has an opportunity to encourage transition to low-GWP solutions in MVAC in medium and heavy-duty vehicles with a mechanism similar to that utilized in the light-duty vehicle GHG emission standards. (Chemours)
103. Comment(s): CARB should create incentives to encourage conversion in the MVAC especially for medium- and heavy-duty vehicles. (Chemours)
104. Comment(s): Replacement of HCFC-22 with higher GWP products will create a need for an additional transition. CARB should provide clear direction to industry to drive conversion to <1,500 GWP (when options are available) rather than options that may only be interim solutions. (Chemours)
105. Comment(s): In this and additional actions to reduce HFC emissions, CARB should seek to reduce short-lived climate pollutants without causing additional long-term issues by sacrificing energy efficiency. (Chemours)
106. Comment(s): Transitioning to lower GWP products now can support SB 350 and other state energy conservation goals like those at the California Energy Commission rather than waiting for longer term very, very low-GWP products to become available. (Chemours)
107. Comment(s): The household refrigerator appliance industry is transitioning away from HFCs, but there are challenges for this industry that CARB and California Legislature should consider while developing reductions strategies. (AHAM)
108. Comment(s): CARB staff should look into solar cooling and refrigeration as alternatives. (Public Solar Power Coalition)



109. Comment(s): Methane should stay in the ground. (Public Solar Power Coalition)
110. Comment(s): CARB should look into alternatives such as isobutane, natural gas and electricity-based refrigeration. Moving forward, CARB should ensure that actions taken to reduce HFCs are not to the detriment of the refrigeration and cooling industry. (CCAC)
111. Comment(s): CARB should make publicly available the top line data on aggregate amounts of HFC refrigerants reported [to CARB] through R3 as recovered, reclaimed, and destroyed annually under the RMP. (EIA)

#### **IV. PEER REVIEW**

Health and Safety Code section 57004 sets forth requirements for peer review of identified portions of rulemakings proposed by entities within the California Environmental Protection Agency, including CARB. CARB determined that the rulemaking at issue does not contain scientific basis or a scientific portion subject to peer review, and thus no peer review as set forth in section 57004 was or needed to be performed.