



OFFICE OF ATMOSPHERIC PROTECTION

WASHINGTON, D.C. 20460

October 11, 2024

Mr. Nicholas Poole
Technical Manager
Refrigerant Solutions Limited
8 Murieston Road
Hale, Altrincham, Cheshire, WA15 9ST
United Kingdom

Re: Incompleteness Determination of SNAP Submission for R-480A in MVAC

Dear Mr. Poole:

Thank you for Refrigerant Solutions Limited's submission to the U.S. Environmental Protection Agency (EPA). The EPA established the Significant New Alternatives Policy (SNAP) program to implement section 612 of the Clean Air Act. Your application, received on August 2, 2023, with additional information submitted on November 17, 2023, February 14, 2024, May 16, 2024, and August 1, 2024, has been reviewed for completeness. We have found the submission to be incomplete for use in motor vehicle air conditioning (MVAC). The following information is necessary in order to allow the agency to continue the review of Refrigerant Solutions Limited's submission for R-480A in MVAC.

1. *Unique Fittings Requirements.* Under the regulations at 40 CFR part 82 subpart G, Appendix H, all fittings for alternative motor vehicle refrigerants must meet the following requirement: "for each type of container, the fitting for each refrigerant must differ from the fitting for that type of container for all other refrigerants." On May 16, 2024, in Part IV, Section A, Number 3, part (a), the submission indicates that the technology changes needed for any type of vehicle in the MVAC sector would use a "set of fittings unique to R-134a." The submission does not provide enough information on the high-side and low-side fittings for the service ports to determine if they are unique.
 - a. Noting that unique servicing fittings are required for new and retrofit motor vehicle air conditioners, please describe your plans to implement such requirements for this retrofit application. Refer to 40 CFR part 82, subpart G, Appendix H, for the criteria for uniqueness of fittings, [linked here](#).
 - b. Do you intend to use a screw-on fitting, or a quick connect?
 - i. If you intend to use a screw-on fitting, what will the diameter, thread pitch, and thread direction be? What would be the shape of the thread (triangular or Acme)?

- ii. If you intend to use a quick connect, what is different about that quick connect from those for other refrigerants?
 - c. Please provide diagrams of the fittings showing sizes, dimensions, shapes, and directions of each fitting.
 - d. You mention that “Vehicles that change to or use R-480A will have a tag or sticker attached to the engine compartment to state that R-480A is present.” EPA regulations require a unique color on the label. What unique color will the new label for R-480A use?
- 2. *Retrofit Installation.* You have submitted this substitute as a retrofit for HFC-134a.
 - a. Who will be performing this retrofit? I.e., will this retrofit be performed by 608- or 609-certified mechanics, or by do-it-yourselfers (DIYer)?
 - b. Please describe how this retrofit would be performed, including any changes made to the MVAC system on-board the vehicle.
 - c. Please describe any standards governing how this retrofit would be performed.
 - d. What information will you provide end-users to inform them that R-480A may only be used as a retrofit for HFC-134a, and not any other refrigerant? We are noting that retrofitting an MVAC system from a lower GWP refrigerant to a higher GWP refrigerant is considered tampering and a violation of Title II of the Clean Air Act.
- 3. *Regulations that restrict topping off an MVAC System, and the Venting Prohibition.* Under the SNAP regulations at 40 CFR part 82, subpart G, Appendix D, topping off an MVAC system with a different refrigerant is prohibited. In addition, venting existing refrigerant is a violation under section 608 of the Clean Air Act. Since do-it-yourself (DIY) mechanics typically do not have the appropriate equipment to recover existing refrigerant, what information are you providing end-users to ensure they follow these regulations?
- 4. *MVAC Refrigerant Recovery Standards.* EPA’s regulations implementing section 609 of the Clean Air Act, at 40 CFR part 82, subpart B, have requirements for servicing that include SAE standards for the recovery equipment that were incorporated by reference.
 - a. If a certified mechanic has equipment to recover the existing refrigerant, to what standard is that equipment certified?
 - b. What equipment would you use to recover R-480A?
 - c. Is this refrigerant covered by any existing industry purity standard?
- 5. *Self-Sealing Small Cans.* EPA’s regulations implementing section 608 of the Clean Air Act, at 40 CFR part 82, subpart F, require that anyone who buys refrigerant to be 608-certified (i.e., that they have passed an EPA-approved test concerning appliance maintenance, servicing, repair, and disposal and its environmental impacts from an EPA-approved testing organization). One exception to that requirement is for the purchase of small cans of refrigerant used in MVAC, which don’t require 608-certification if the small cans have self-sealing valves. Which company, or companies, have you identified to provide self-sealing small cans of refrigerant, as required under the 40 CFR part 82, subpart F regulations?
- 6. *Confidential Business Information (CBI).* If you wish to claim any of the information submitted in response to the requests above as CBI under the Clean Air Act, please provide two copies of

your response: a public version with all CBI removed, and a copy for the EPA containing the CBI (include a claim of the information to be confidential and the reason for confidentiality).

Here is a summary of information concerning your submission:

Substitute name: R-480A
Sector: Refrigeration and Air Conditioning
End-uses: MVAC
New or retrofit usage: Retrofit

Date received: August 2, 2023
Additional information received: November 17, 2023; February 14, 2024, May 16, 2024, and August 1, 2024
Status of submission: Incomplete

The information requested above is necessary for us to continue our review. If you have any questions about your submission or would like to make arrangements for secure transmission of any confidential business information, please contact me at (202) 564-2473. You may instead send the information via e-mail, at Silver.Joshua@epa.gov, if you are willing to accept the risks associated with e-mail transmission.

Sincerely,



Joshua Silver
Case Manager
Technology Transition Branch
Stratospheric Protection Division