



Unitary Products Technical Services Service Letter

Letter: **YS-003-2017**

Date: April 10, 2017

To: All Unitary Products Branch Service, Sales, and Training Managers
All Unitary Products Distribution Service, Sales, and Training Managers
Unitary Products Technical Services Group, RTSM, Warranty, Training Group, etc.

Subject: **Alternate R-22 Refrigerant Statement for Unitary Products Equipment**

Product: **Residential & Light Commercial AC/HP Models Designed for R-22 Refrigerants**

Summary: This letter provides information related to field service use of alternate refrigerants in place of R-22 refrigerant for use in AC/HP units produced by the Unitary Products group. This also provides guidance on the replacement refrigerant policy related to warranty coverage.

We have received many inquiries on using alternate refrigerants in the unitary equipment produced using R-22 refrigerants that are in field service. Given the R-22 refrigerant supply situation and costs in the field, this information provides clarification to our distribution partners and contractors in the field.

As phase out of R-22 refrigerant nears its planned completion, there are issues with regard to warranty coverage and refrigerant replacement in the field. Internal reviews of various R-22 alternate refrigerants has been done along with selected equipment testing under field conditions. The result of this investigation, information provided by our refrigerant suppliers, and other industry sources, we are not endorsing any one refrigerant as an authorized field replacement for R-22.



Authorized R-22 Alternate Refrigerants: For field service replacement and for warranty claims only, we will authorize several specific refrigerants available in the field where R-22 would normally be required to be used. These authorized alternate refrigerants are **R-407C, R421A, and R-422D**.

1. Use R-407C for systems using polyol ester (POE) lubricant only. Use of R-407C in systems using mineral oil (MO) or alkyl benzene lubricants are **not approved**.
2. Use R-421A may be used for systems using either POE or MO lubricant applications
3. Use R-422D may be used for systems using either POE or MO lubricant applications

Warranty Considerations: Using these authorized alternate refrigerants (R-407C, R421A or R422D) will not void the terms of the unit warranties as outlined on warranty certificate(s) originally provided with product(s). In addition, warranty claim charges for refrigerant for these three refrigerants will be covered under standard warranty terms.

Additional Information: There is a large amount of information available on this topic, especially that from the refrigerant manufacturers. Depending upon which alternate refrigerant is used, we recommend that information from the refrigerant manufacturer is reviewed for specific application and retrofit

requirements. Note the following items related to the use of these alternate refrigerants. As the original refrigerant, R-22 is still the preferred refrigerant for field service since that is what the system was originally designed with to meet performance characteristics.

1. The term “drop-in” for retrofits implies that all the contractor does is to “drop-in” the alternate refrigerant into the existing product and the system will work as before. That statement is **not correct** as all R-22 alternate refrigerants result in some system performance differences in efficiency, capacity or both due to the refrigerant composition. Different operating pressures and heat transfer characteristics result in R-22 alternate refrigerants producing changes in system cooling capacity, particularly in high ambient temperatures. Longer run times or failure to meet expected load requirements after retrofits are possible. Also, if the original R-22 system is or was not performing correctly, replacing the refrigerant will not resolve those system problems.
2. Use of “drop-in” refrigerants also may result in contractors skipping routine procedures for field service, such as changing filter-driers, flushing line-sets, checking the unit has the correct lubricant (type of oil) within the system, proper charging procedures, and recovery of any remaining original R-22 refrigerant. Since alternate refrigerants require higher mass flow to provide the same cooling capacity, and some component changes may be required such as expansion devices, line sets, evaluating oil return, replacing Schrader valve caps/cores, checking O-ring joints and seals. Contractors should check that refrigeration components used are compatible with the refrigerant used.
3. **NOTICE:** “Drop in” refrigerants such as **R-22a, R-438A** (a.k.a. MO99), or **R-290** (propane) should never be used in our unitary products since they have a higher percentage of flammable component(s) and are capable of causing severe injury and equipment damage. Use of unapproved R-22a, MO99, R-290 or other propane-based refrigerants in these products is considered to be “unauthorized alteration” and **excludes those altered products from warranty coverage**. Refer to the Unitary Products Service Letter **YS-014-016** published May 10, 2016 for more details on this topic of propane-based refrigerants.
4. Please note that the servicing contractor should always follow good refrigeration, safety, and service practices related to use of alternate refrigerants. Contractors should make a record of all replacement refrigerants used either on the data tag of equipment and or service ticket along with a clear, visible, marking or tag on the unit to assist next service person for knowing what is in the system.

Please let us know if you have any questions, comments, or need more information on this policy statement on the use of alternate refrigerants in the field for R-22 systems. Contact the UPG Technical Services group at 1-877-874-7378 or at cg-upgtechsupport@jci.com by email.

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