

Recommended Retrofit Procedure, R-22 to Forane® 427A

Non-toxic, non-flammable and zero ODP refrigerant, Forane® 427A is the solution for a simplified conversion of existing R-22 installations. Retrofit procedures that could be given by some original equipment manufacturers (OEMs) should be followed as a priority. The following guidelines are given as an indication only.

BEFORE THE RETROFIT OF THE SYSTEM:

- Make sure that the system is operating properly, repair if necessary.
- Check for any leaks, repair if necessary.
- Check that the elastomeric seals, gaskets and valve packing are in good condition, replace if necessary.
- Record if possible the operating conditions of the system with R-22, this will provide a baseline for comparison when the system is put back into operation with Forane® 427A.

CHANGEOVER PROCEDURE:

- Properly recover the entire R-22 charge from the system using appropriate recovery cylinders. Arkema does not recommend mixing Forane® 427A with R-22.
- Remove the original oil from the system. When replacing R-22 by Forane® 427A it is recommended to replace the original oil (mineral or alkylbenzene) by a polyolester oil (POE). But thanks to Forane® 427A's ability to tolerate a high residual amount of original oil in the POE lubricant, in most cases only one oil change is required.
- Properly recover the drained oil for destruction.
- Analyze if possible the drained oil (humidity, acidity, particles): it is representative of the state of repair of the equipment.

- Recharge the system with POE lubricant: use the same volume of POE oil as original oil.
- Replace the filter drier.
- Evacuate the installation.
- Recharge the system with Forane® 427A. Forane® 427A must be charged in the liquid phase. It is recommended to first fill the installation with a Forane® 427A charge equal to 95% wt. of the nominal R-22 charge and to top up to 100% only if necessary. As Forane® 427A is a zeotropic blend some bubbles can appear at the compressor sight glass, this is not synonymous of under-charge.
- Restart the installation. Record the new operating conditions and compare them to those obtained with R-22. Be careful: the Pressure-Temperature relationship for Forane® 427A is different from the P-T relationship for R-22 (please refer to the saturation table). It may be necessary to adjust the expansion valve to achieve an optimized superheat.
- Clearly label the system to indicate that it is now running with Forane® 427A and POE lubricant.

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BEFORE HANDLING THIS MATERIAL, READ AND UNDERSTAND THE SDS (SAFETY DATA SHEET) FOR ADDITIONAL INFORMATION ON PERSONAL PROTECTIVE EQUIPMENT AND FOR SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION.

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