

National Refrigerants, Inc.

Analytical Laboratory

661 Kenyon Avenue
 Bridgeton, NJ 08302
 Telephone (856) 455-2776
 Fax (856) 455-4733

- Problems Found Action Required
- Normal Results No Action Needed

SL:

Refrigerant Analysis Report

Customer: Johnson Controls	P.O. No.: NRIHP
Address: 812 First State Blvd. Wilmington DE 19804	Refrigerant Type: R-134a Job Location: DuPont Experimental System S/N: GACM 117 864
Contact: Kevin Frazee	Sample ID#: Chiller 8
Telephone: 302-353-0315	Lab. Reference: 170201-10
Fax: kevin.m.fraze@jci.com	Date Rec.: 2/1/17

Analysis

Sample Results

In-Service Limits

Identification	By Gas Chromatography	R-134a	
Moisture	parts per million by weight	5	120 Max.
High Boiling Residue	per cent by volume	1.0	2 Max.
Acidity	parts per million (as HCl)	<0.2	1 Max.
Non-Condensable Gas	per cent by volume	-	1.5 Max.
Chloride	pass/fail	Pass	pass
Purity	% by weight (Gas Chromatography)	99.95	99.5 Min.
Particulates	pass/fail	Pass	pass
Other			

(1) 20 ppm for R-11, 113, 123.

Comments: The high boiling residue (1.0%) is a clear amber oil, most certainly system oil. All other above test results show good quality in-service R-134a and indicate normal system performance. Trace organic impurities present are R-143a: 0.01%, R-152: 0.01% and an unknown 0.02%. Resample at next scheduled maintenance interval.

Laboratory Supervisor: Dan Wright, Lab Manager

Date: 2/3/2017

Attention: This Report is provided to the Customer only and may not be utilized by any other person or entity without written confirmation of same by National Refrigerants, Inc. (NRI). Upon written request, and with the written permission of the Customer, NRI will confirm the substance of this Report to any person or entity requesting such confirmation. Any alteration of this document by any person may constitute a violation of State and/or Federal Civil Criminal Law in the United States and/or other countries. The technical data and comments provided on the sample you supplied is done as a service to you as a customer of NRI. Since conditions of its use are outside of NRI's control, NRI assumes no liability for the use of such information or any damages incurred through its use or application. Nothing contained in such information is to be construed as contractual or providing some form of warranty on the part of NRI.