

National Refrigerants, Inc.

Analytical Laboratory

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- 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 Station
	System S/N: GALM 127 698
Contact: Kevin Frazee	Sample ID#: Chiller 9
Telephone: 302-353-0315	Lab. Reference: 170214-01
Fax: kevin.m.fraze@jci.com	Date Rec.: 2/14/17

Analysis

Sample Results

In-Service Limits

		<u>Sample Results</u>	<u>In-Service Limits</u>
Identification	By Gas Chromatography	R-134a	
Moisture	parts per million by weight	5	120 Max.
High Boiling Residue	per cent by volume	0.15	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)	99.96	99.5 Min.
Particulates	pass/fail	Pass	pass
Other			

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

Comments: The high boiling residue (0.15%) is a cloudy amber 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% and an unknown 0.01%. Resample at next scheduled maintenance interval.

Laboratory Supervisor: Dan Wright, Lab Manager

Date: 2/15/2017

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