

National Refrigerants, Inc.

Analytical Laboratory

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Problems Found Action Required

Normal Results No Action Needed

SL: 03

Refrigerant Analysis Report

Customer:	Johnson Controls	P.O. No.:	NRIHP
Address:	812 First St Blvd. Wilmington, DE 19804	Refrigerant Type:	R-134a
Contact:	Kevin Fraze	Job Location:	DuPont Experimental Station
Telephone:	302-353-0315	System S/N:	GACM 117 864
Fax:	kevin.m.fraze@jci.com	Sample ID#:	Chiller 8
		Lab. Reference:	181228-08
		Date Rec.:	12/28/18

Analysis

Sample Results

In-Service Limits

Identification	By Gas Chromatography	R-134a	
Moisture	parts per million by weight	35	120 <u>Max.</u>
High Boiling Residue	per cent by volume	0.21	2 <u>Max.</u>
Acidity	parts per million (as HCl)	<0.20	1 <u>Max.</u>
Non-Condensable Gas	per cent by volume	-	1.5 <u>Max.</u>
Chloride	pass/fail	Pass	<u>pass</u>
Purity	% by weight (Gas Chromatography)	99.95	99.5 <u>Min.</u>
Particulates	pass/fail	Pass	<u>pass</u>
Other	Total Hrs Run: 52,182, Starts: 2,279		

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

Comments: The high boiling residue (0.21%) is a hazy light yellow oil. All other above test results show good quality in-service R-134a and indicate normal system performance. Trace organic impurities present are R-22: 0.03% and R-143a: 0.01%. Resample at next scheduled maintenance interval.

Laboratory Supervisor: Dan Wright, Manager

Digitally signed by Dan Wright, Manager
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Date: 2019.01.03 07:45:52 -0500

Date: 1/2/2019

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