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	**Refrigerant Type:**	R-134a
	Wilmington, DE	**Job Location:**	DuPont Experimental
	19804	**System S/N:**	MRP 626 904
Contact:	Kevin Fraze	**Sample ID#:**	Chiller 7
Telephone:	302-353-0315	**Lab. Reference:**	190408-05
Fax:	kevin.m.fraze@jci.com	**Date Rec.:**	4/8/19

Analysis

		Sample Results	In-Service Limits
Identification	By Gas Chromatography	R-134a	
Moisture	parts per million by weight	35	120 Max.
High Boiling Residue	per cent by volume	0.01	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)	99.97	99.5 Min.
Particulates	pass/fail	Pass	pass
Other			

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

Comments: All of the 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 R-152a: 0.01%. Resample at next scheduled maintenance interval.

Laboratory Supervisor: Daniel Wright Date: 4/10/2019

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