

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 127 698
Fax:	kevin.m.fraze@jci.com	Sample ID#:	Chiller 9
		Lab. Reference:	181228-09
		Date Rec.:	12/28/18

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	<0.01	2 Max.
Acidity	parts per million (as HCl)	<0.20	1 Max.
Non-Condensable Gas	per cent by volume	-	1.5 Max.
Chloride	pass/fail	Pass	pass
Purity	% by weight (Gas Chromatography)	99.98	99.5 Min.
Particulates	pass/fail	Pass	pass
Other	Total Hrs Run: 48,950, Starts: 2,127		

(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. The only significant organic impurity present individually is R-143a: 0.01%. Resample at next scheduled maintenance interval.

Laboratory Supervisor: Dan Wright, Manager

Date: 1/2/2019

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