

AHRI Standard 700

The Benchmark for Reclaimed Refrigerant

A-Gas Singapore

INTRODUCTION

In line with international best practices, refrigerants that will be reused in systems other than the one they were recovered from must be tested and, if necessary, reprocessed to meet AHRI Standard 700 specifications.

As Singapore moves towards a net-zero future, reclaimed refrigerants will play an important role in supporting sustainable refrigerant management.

It is essential that all stakeholders – technicians, contractors, system owners, and policymakers – understand what AHRI Standard 700 specifications are, why they matter, and how poor-quality refrigerants can impact the HVAC&R industry.

AHRI STANDARD 700

The AHRI Standard 700 Specifications for Refrigerants is a globally recognised standard for refrigerant purity and quality used in air conditioning and refrigeration systems. It also defines the approved test methods for analysing refrigerants - tests that are conducted by A-Gas Singapore's onsite laboratory.

The standard establishes purity requirements, verifies composition, and specifies test methods to ensure refrigerant acceptability, including CFCs, HCFCs, HFCs, HFOs, and hydrocarbons. These specifications apply to all refrigerants used in new or existing HVAC&R systems, whether the refrigerant is new, reclaimed, or repackaged.

A-Gas supplies reclaimed refrigerants that comply with AHRI 700 Standards and are certified by the Singapore Green Building Council.



A-Gas' onsite laboratory in Singapore is equipped to test refrigerants to AHRI Standard 700 standards.

KEY POINTS

- Lifecycle Refrigerant Management (LRM) is a practical and economically viable circular economy solution that focusses on **avoiding leaks**, promoting **refrigerant recovery** and increasing **reclamation rates** to mitigate unnecessary virgin refrigerant production and emissions.
- Increasing refrigerant reclamation rates is an essential part of effective LRM.
- Reclaimed refrigerant that conforms to AHRI Standard 700 reduces the risk of potential equipment damage and poor efficiency from non-certified or untested, low purity refrigerants.
- Reclamation to AHRI700 certified standards ensures the same quality as virgin refrigerant - it means it has been reprocessed and ensures the reclaimed refrigerant is purified and conforms to AHRI specifications.

WHY AHRI STANDARD 700 MATTERS

Reclaimed refrigerants are a vital part of sustainable refrigerant management, and it is essential that they comply with AHRI Standard 700 specifications to ensure they meet international quality standards and are fit for purpose.

At A-Gas, our advanced separation technology and on-site laboratories enable us to process, and thoroughly test refrigerants, reclaiming them back to virgin grade AHRI 700 standards.

Using AHRI 700-compliant reclaimed refrigerants gives servicing contractors and system owners peace of mind that critical systems will perform efficiently and reliably, reducing the risk of system damage and costly repairs caused by poor-quality gas.



Recovered refrigerant is tested and analysed by experienced technicians at A-Gas laboratories.

ENSURING YOUR REFRIGERANT MEETS AHRI STANDARD 700

Testing recovered refrigerant to determine its conformance with AHRI standards is an essential first step for potential reuse. If tests indicate that the refrigerant does not meet allowable purity or contaminant levels, it must be reclaimed to remove impurities and restore the required quality.

The reclamation process can include processing the used refrigerant through filters, dryers, non-condensable gases removal equipment and separation/distillation, to return it to virgin grade specification. All AHRI quality parameters are then verified using the analytical methods prescribed in the AHRI standard to determine whether the reclamation process has been successful, and the refrigerant is fit for re-use.

An additional benefit of assessing refrigerant quality is that it enables system owners to diagnose potential issues and helps contractors establish a baseline for future maintenance or work.



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Certificate of Analysis

Customer Name	DAIKIN	Sample Number	SGCOA24-283
Job Name	R134a ANALYSIS	PC Code:	RA00032
Job ID	Red Lion	Collected By	Pandian
Manufacturer	Daikin	Receive Date	30/11/2024
Model Number	HXEV400TSTT0	Analysis Date	01/12/2024 – 19/12/2024
Serial Number	W19230046		
Equipment Name / ID	CH-3		

Analysis Items	Sample Results	AHRI 700 Specification	
Moisture	18.8	Max 10 ppm	by weight
High Boiling Residue	0.0653	Max 0.01 %	by weight
Chloride	PASS	Pass	No visible turbidity
Particulates / Solids	FAIL	Pass	Visually Clean
Acidity	<1.00	Max 1 ppm	by weight (as HCl)
Purity	99.90	Min 99.50 %	by weight
Non-Condensable Gas	22.71	Max 1.50%	by weight

Remarks: Sample tested as received. Sample does not meet specifications for Moisture, HBR, Particulates and NCG. Moisture is above 10ppm. HBR is above 0.01%. Sample is positive with yellow oil. Non-Condensable Gas is above 1.50%.

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This report is based on a single sample.

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Sample analysis report showing refrigerant and oil quality results reported against AHRI Standard 700

A-GAS SINGAPORE

At A-Gas Singapore, we specialise in the supply and lifecycle management of refrigerants and associated products and services. We are committed to capturing refrigerant gases for safe reuse or destruction, preventing their harmful release into the atmosphere.

As part of the global A-Gas Group, we bring decades of expertise in refrigerant management to industries across Singapore, delivering innovative solutions that keep critical cooling and air-conditioning systems operating safely, efficiently, and sustainably.

References

- The Air-Conditioning, Heating and Refrigeration Institute, *AHRI Standard 700: 2019 Standard for Specifications for Refrigerants*, 2019