



# Adande Refrigerated Drawers With Hydrocarbon Refrigerant

# Why Are Adande Offering Units With Hydrocarbon Refrigerant?



- R404A refrigerant will be phased out starting in January 2020
- Hydrocarbon refrigerants are natural, non-toxic and have no Ozone depleting properties
- Tens of millions of R600a Hydrocarbon refrigerators have been sold into the domestic market over the last 15 years producing huge energy savings
- Pressures within the R600a refrigerant system are lower, allowing the compressor to do less work saving energy  
Adande units save 19% energy over R404A when operating as freezers
- No additional capital costs for HC option, and all the benefits of lower operating costs too
- Fully risk assessed with testing in laboratory & in busy QSR outlets. Many units have been sold since 2011

**It's an Adande®; it works like no other fridge or freezer...**

# Why Choose Adande Units With HC Refrigerant?



## Adande's Unique Advantages vs Traditional Refrigeration are Maintained

- Precise, stable temperature from  $-22^{\circ}\text{C}$  to  $+15^{\circ}\text{C}$  they 'Hold the Cold'
- Better food quality, less waste
- Lower maintenance – for example, long seal life
- Modularity giving flexibility in design

## Additional Benefits Made

- Further reduction in energy usage (19% as freezer demonstrated) and still best in class
- Ease of removal of modular units for repair/hot work ensures less downtime
- R600a fully demonstrated in domestic market

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# In Restaurant Performance



Over 2,000 Adande R600a Models in Operation since 2010  
in busy QSRs, Supermarkets & Casual Dining Operations

- ✓ Flawless operation
- ✓ Performance maintained
- ✓ Metered 19% energy saving  
In like for like testing against existing Adande units



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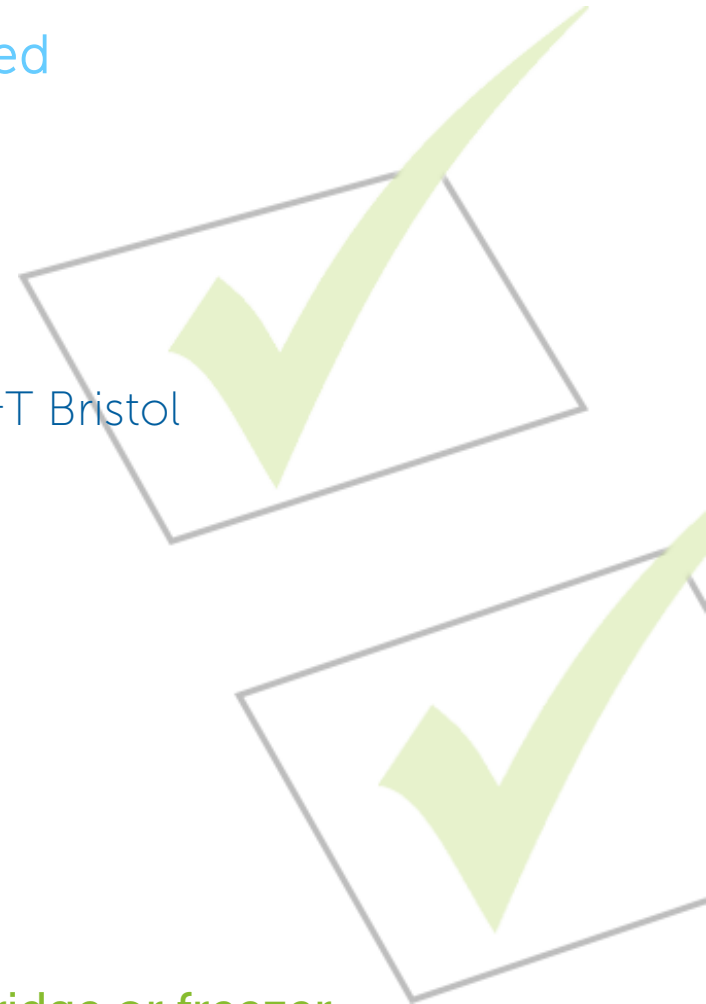
# Safety

## Risk Assessment



### Full and Thorough Risk Assessment Completed

- Detailed risk assessment by Adande – accepted by independent experts
- Independent Explosion testing carried out by RD&T Bristol
- Units carry labels to indicate flammable gas



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# Laboratory Tests

## Performance



R600a Hydrocarbon Compared to R404A Refrigerant  
In like for like testing against existing Adande units

- ✓ 19% energy saving
- ✓ Equal chiller performance
- ✓ Equal freezer performance
- ✓ Equal pull-down performance
- ✓ 50% Less refrigerant charge

Did you know  
The HC charge in an Adande  
Module is only 65g;  
that's smaller than a  
Disposable lighter!

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# Frequently Asked Questions



## Are Hydrocarbon Refrigerants Safe?

Millions of tonnes of hydrocarbons are used safely every year throughout the world for cooking, heating, powering vehicles, and of course, domestic refrigeration. HC gases are flammable, but if handled correctly, are safe to use.

## Are Service Companies Able to Handle HC Units?

Hydrocarbon is relatively new to the market in terms of service companies using HC. However, more and more companies are becoming trained as the use of HC grows; to date 75% of the engineers with our main service provider are proficient, and this will only increase in time

## Will the Units Cost More?

The HC units will cost the same as our standard units but with the advantage of lower operating costs

## Do the Units Work in the Same Way?

The units work in the same way as our standard Adande units giving equal chiller, freezer and pull down performance but with the benefits of 68% less refrigerant charge and 19% energy saving

## What About Other Refrigerant Options?

HFO refrigerants e.g. R448A and R449A and other variants, may appear an alternative option to HCs, but buy with caution as these types are to be phased out from 2022

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