



## Klea 473A advantages at a glance

- Low GWP: reduction by ca. 90% vs R23/508
- A1 safety
  - non flammable
  - nontoxic
- Effective to at least -75°C
- EU F-Gas regulation compliant
- Future-proof solution
- Near drop-in
- Low Glide

## Project details

**Project:** Field trials of Klea 473A in Test Chambers

**Client:** SJJ System Service Ltd

**Products Used:** Klea 473A



## Project Description

SJJ offers environmental test chambers and test systems utilising cascade refrigeration using R-404A, R-23, R-508.

The switch to a low GWP KLEA 473A had a dual positive outcome. Trials show its a near drop-in for R-23 with a reduction of GWP by 90%.

## Solution

Together with Koura, SJJ embarked on a test programme to assess the suitability of Klea 473A as an alternative to R-23 across a range of environmental test chambers.

Klea 473A refrigerant is designed for ultra low temperatures, down to -75 °C in existing and new systems.

With a GWP of 1,830, Klea 473A gives a 90% reduction in GWP compared to R-23, which makes it an ideal F-Gas compliant product for cold chain applications at ultra-low temperatures such as seafood transportation, as well as environmental chambers and biomedical freezers or transportation.

The tests demonstrated near-equivalent performance with Klea 473A vs R-23 utilising POE 32 oil, with only a slight adjustment to the expansion valve, Klea 473A is compatible with current compressor technology running on R-23 resulting in a near drop-in for semi-hermetic and hermetic compressor systems.

## Challenges

R-23 has a GWP of 14,800 and will be subject to a phase out by 2030 under the F-Gas regulations.

The challenge was therefore to source a product that would provide for a long-term sustainable, energy efficient alternative to R-23, which was F-Gas compliant, high performance with ease of use.

## Customer satisfaction

Steve Jones, Managing Director,  
SJJ Systems Services Ltd

SJJ System Services Ltd has a proud tradition of technical innovation and vast experience with cascade refrigeration systems within the environmental test chamber sector, and we set ourselves to the highest quality standards in meeting the needs of our customers around the world.

Increasingly, this means making choices that minimize our impact on the environment when it comes to selecting refrigerants – and in Klea 473A, we have found a long-term environment-friendly solution with a GWP 1830 as opposed to that of 14,800 GWP with R-23.

**Koura**  
**Klea®**

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