



FAQ about R-32

1 Is R-32 safe?

Because R-32 belongs to the category of lower flammable refrigerants (class 2L in ISO 817 standard), it can be safely applied in most air conditioner and heat pump applications. Instructions from the manufacturers of R-32 equipment and from suppliers of R-32 refrigerant cylinders must, of course, be followed, as must European and national safety rules - as is the case for any type of refrigerant.

R-32 will not ignite if the concentration level in a room stays below the lower flammability limit (0,306kg/m³). International and European safety legislation and standards such as EN 60335-2-40 and EN 378 define requirements to remain far below the lower flammable limit in case of accidental leakage.

For example

Current Daikin model ranges using R-32 have following requirements to guarantee safe use, which are perfectly possible to meet in practice.

		Minimum required floor area	Typical floor area for these models	OK to install R-32?
Daikin Emura	FTXJ20-RXJ20	no limits	20 m ²	Yes
	FTXJ25-RXJ25	no limits	25 m ²	Yes
	FTXJ35-RXJ35	no limits	35 m ²	Yes
	FTXJ50-RXJ50	2,76 m ²	50 m ²	Yes
FTXM	FTXM20-RXM20	no limits	20 m ²	Yes
	FTXM25-RXM25	no limits	25 m ²	Yes
	FTXM35-RXM35	no limits	35 m ²	Yes
	FTXM42-RXM42	3,44 m ²	42 m ²	Yes
	FTXM50-RXM50	3,44 m ²	50 m ²	Yes
Round flow cassette	FCAHG71F-RZAG71LV1	7,8m ²	68m ²	Yes
	FCAHG100F-RZAG7100V1	17,8m ²	95m ²	Yes
	FCAHG125F-RZAG125LV1	17,8m ²	95m ²	Yes
	FCAHG140F-RZAG140LV1	17,8m ²	134m ²	Yes

Calculated based on the requirements of the EN 60335-2-40 safety standard, using maximum refrigerant charge values for maximum piping length between indoor and outdoor.

2 As an installer/service technician, do I need other tools to install R-32 equipment?

It is particular important to check that manifolds, leak detectors and recovery pumps are permitted to be used for R-32. Tools are available on the market which are permitted for dual use, suitable for both R-32 and R-410A equipment. If you are in doubt, check with the tool supplier. For recovering R-32 you need an approved R-32 recovery cylinder.

3 Will R-410A no longer be available?

R-410A will remain available for servicing installed equipment. For new equipment, the use of R-410A will be banned in Europe in single split air conditioners with a refrigerant charge below 3 kg from 2025, but not in other applications because of the “phase down” targets of the EU F-gas regulation, The use of R-32 is expected to grow in other applications as well because of the F-gas regulation “phase down” targets.

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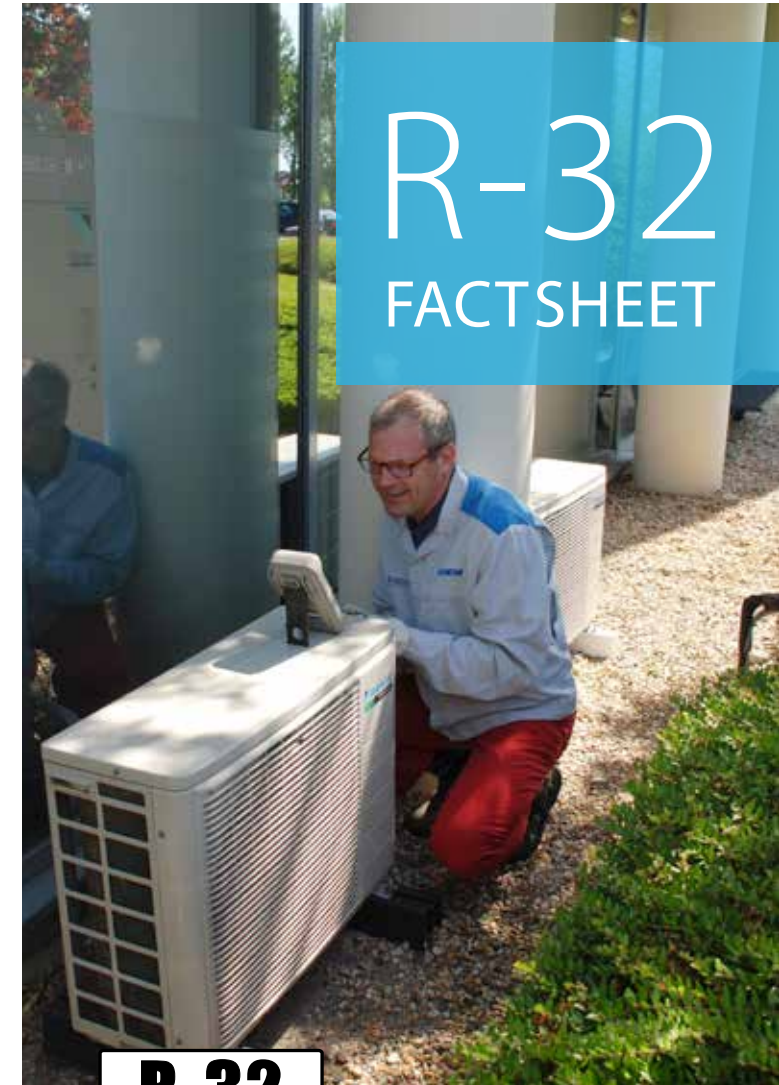


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R-32



Ten years ahead of legislation

As a market leader, Daikin aims to develop systems that improve indoor comfort levels while having low environmental impact, with energy efficiency and refrigerant choice as key factors. With this vision in mind, Daikin launched the **first worldwide air conditioners with R-32 refrigerant** in Japan end of 2012 where several millions of units have been installed since.

Meanwhile, R-32 models have also been introduced in other countries such as Australia, New Zealand, India, Australia, Thailand, Vietnam, the Philippines, Malaysia, Indonesia and since 2013 also as a first in Europe.



Did you know?

The new European F-gas regulation 517/2014 includes a ban on some refrigerants in certain applications. For new single split type air conditioners with a refrigerant charge below 3 kg, the use of R-410A will be banned from 2025 and refrigerants with a GWP below 750 become mandatory. R-32 refrigerant is a perfect answer to this, **Daikin already introduces R-32 models 10 years ahead of this requirement, because the sooner the industry changes to lower GWP refrigerants, the earlier the environmental impact of HFC emissions can be reduced.**

What is R-32?

The chemical name for R-32 is difluoromethane. It is already used for many years as a component of the refrigerant blend R-410A (R-410A is a blend of 50% R-32 and 50% R-125). Daikin and other industry players recognize today that there are several advantages of using R-32 in its pure form instead of R-410A or other types of blends.

	R-410A	R-32
Composition	Blend of 50% R-32 + 50% R-125	Pure R-32 (no blend)
GWP (Global Warming Potential)	2087.5	675
ODP (Ozone Depletion Potential)	0	0

GWP is not the only parameter

There is no refrigerant which can meet the needs of every kind of application. This means that Daikin had to evaluate its options carefully, taking into account not only the GWP or amount of refrigerant used, but also aspects such as energy efficiency, safety and affordability.

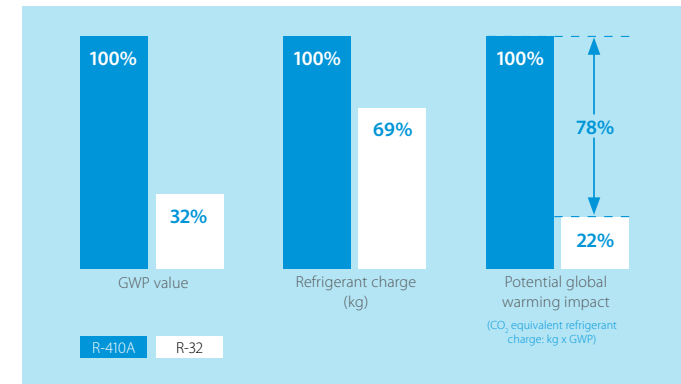
For example, selecting a refrigerant with a lower GWP but which uses more energy would not be a good choice, as it would be counterproductive for the total product's global warming impact.

Daikin, followed by other industry players, selected R-32 because it contributes to the EU F-gas regulation targets, whilst being energy efficient, safe and affordable.

Advantages of R-32

R-32 has a number of interesting environmental benefits: Compared to the commonly used refrigerant R-410A, the Global Warming potential of R-32 is only one third (GWP is 675 for R-32 compared to 2087.5 for R-410A), while it allows for a much smaller refrigerant volume and high energy efficiency.

Comparison example for Daikin Emura 3.5 kW model available in R-410A and R-32 version*



As a single component refrigerant, R-32 is also easier to recycle and reuse, which is another environmental bonus.

In addition, R-32 is easy to handle for installers and service technicians as it can be charged in both liquid and gas phase and working pressures are similar to R-410A. There is also no need to worry about fractionation or glide problems as R-32 is not a blend refrigerant.