

IMPORTANT INFORMATION FOR MACHINE MANUFACTURERS

Compliant and safe solutions
for industrial applications

TRANSITION TO NEW REFRIGERANT GASES



FLUID COOLERS

FOR MACHINE MANUFACTURERS

For **Metal**-processing machines, for **packing** machines for the **pharmaceutical** and **chemical industry**, **printing** machines, for **wood**-processing machines, **laser** cutting machines, **food-industry**, **plastic** and **glass**-processing machines, for **tobacco**-processing machines, **welding**, high frequency **electronic equipment**.

Dear Customers,

the progressive **reduction in the use of high GWP greenhouse gases**, provided for by Regulation (EU) 2024/573, is raising tangible questions on future technological choices for industrial cooling systems.

The entry into force of the new regulation from **01.01.2027 radically changes the management of refrigeration systems on board the machine**. Despite being pollutants, the known refrigerant gases are mainly in class A1, therefore exempt from almost all risk analysis. The refrigerant gases of the future are evolving towards solutions with low environmental impact, to comply with the European F-Gas regulation and the strictest global standards, but almost all of them fall under the category of flammable gases.

Current and future players will increasingly include natural refrigerants, such as propane (R290), isobutane (R600a) and CO₂ (R744) with almost zero global warming potential, which for cooling capacities below 12 kW, with GWP < 150, will be the target to be achieved in 2032.

For our products, we have opted for solutions available on the market, which guarantee compliance with the various regulations in the world, at affordable costs and low risks. We will definitively introduce these solutions in the course of the year in view of the entry into force of the F-Gas regulation from 01.01.2027.



Being designated to “place on the market”, we would like to remind our customers that as producers, the products you purchased by 31.12.2026 may be installed within the EEC without any limitation for the sale, installation and subsequent maintenance even after 01.01.2027, as reported in point “b” of Article 1 of Regulation 2024/573.



Below is a brief description of the characteristics of the refrigerant gases chosen for our products.

Cooling capacity below 12 kW, GWP allowed < 150

Why the use of A2L gas?

The choice of HFO refrigerants is the best compromise available on the market today. Defined as fourth generation refrigerants, they have a very low GWP and are less flammable than hydrocarbons. Among those we selected is the new generation R1234yf hydrofluoroolefins, designed to replace HFCs. With a GWP 4, it is especially used in industrial refrigeration and automotive industry.

R454C gas is a low GWP mixture (148), solution used for heat pumps and chillers with reduced GWP. The introduction of several technical solutions, including some aimed at a significant reduction in the refrigerant load (below 1.8 kg), greatly reduces safety problems by greatly simplifying installation near the machine to which it is applied.

As an alternative to the use of A2L gas, we offer solutions with gas in class A1 (by way of exemption).

Why the use of R513A gas?

For many of our customers, over the years we have developed integrated solutions installed on board the machine. The use of A2L refrigerant gases, even if flammable with low impact, are not the most practical and safe solution because in some cases they would require the redesign of the application in order to ensure compliance with the applicable regulations in terms of safety. In these cases, we offer gas solutions in class A1 (R513A), both in the external fairing version and in the integrated version, which avoid these obligations. Despite remaining below the threshold of 750, the use of a gas in class A1 such as R513A (GWP 631), does not comply with the requirements of the regulation (GWP < 150). Therefore, there arises the need to state the reasons why one should use the exemption provided for in the regulation (SAFETY EXEMPTION, art. 12, point 15, letter "c" of Annex IV of Regulation 2024/573 and labelling obligations of the equipment, as per Regulation 2024/2174).

Cooling capacity greater than 12 kW, GWP < 750

For cooling capacities greater than 12 kW, where the legislation does not set time limits (which can also be used beyond 2032) and in order not to place limitations on the installation of chillers on board the machine in compliance with the most stringent safety requirements, we propose the solution with gas in class A1.

Why the use of R513A gas?

With a GWP of 631, R513A is a next-generation refrigerant gas, offering a significantly improved ecological profile and low GWP. Although not zero, R513A causes significant reductions in terms of tCo2 equivalent produced (-64% compared to R407C and -70% compared to R410A), contributing significantly to mitigating climate change. Its **safety class A1** classifies it as non-flammable and low toxicity according to ASHRAE 34 standards, making it a safe solution for industrial applications.

Conclusions

Once the guidelines in the choices of new products have been determined, it will be our responsibility in the second half of the current year to inform our customers and provide support in the necessary analysis of the most appropriate solution.

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Scenario of the categories of refrigerant gases that we will use in our products

	From 1 January 2027		From 1 January 2032	
	With power < 12 kW GWP < 150	With power > 12 kW GWP < 750	With power < 12 kW GWP < 150	With power > 12 kW GWP < 750
EU (F-GAS)	Class A1 gas (by way of exemption for safety requirements)	Class A1 gas	Class A1 gas	Class A1 gas
	Class A2L gas		Prohibition of fluorinated gases (HFC-HFO)	
			Class A3 gas	
From 1 January 2025				
ODSHAR - Canada	Prohibition of use of gases with GWP ≥ 750			
	Class A1 gas			
From 1 January 2026				
AIM Act - USA	Prohibition of use of gases with GWP ≥ 700			
	Class A1 gas			

Flammability classification

A1 = Non infiammabile **A2L** = Low flammability **A3** = High flammability

Compliant and safe solutions for industrial applications
TRANSITION TO NEW REFRIGERANT GASES

Our future-oriented solutions

Exchangers
with air and water exchange

Refrigerant-free
GWP=0



SCW

Recommended solutions
≤ 12 kW and ≥ 12 kW

R513A
A1 or
R454C
R1234yf
A2L
GWP < 150

From 01/01/2027



ACW LP MP



SFT



WCW LP MP



AWEX



ACO LP MP



Product
being developed
for cooling
cutting fluid



SQE



RCF-SD



Product
being developed
for cooling
cutting fluid



RFU



Series produced
with **R513A** gas
as an exception for safety
requirements
for powers
< 12 kW



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Future solutions
 < 12 kW

R744 - CO₂
 A1, GWP=1
 R290 - Propane
 A3, GWP=3,3
 Non-fluorinated
 gases

Future solutions
 > 12 kW

For higher
 powers at 12 kW
 no prohibition on
 the use
 of fluorinated
 gases

From 01/03/2032



ACW



WCW



ACO



RCF-SD



Series produced
 with **R513A** gas
 as an exception
 for safety requirements
 for powers
 < 12 kW



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