

# Guidance for Farmers on Refrigerant Gas Use in Milk Coolers



## *Dairy refrigeration equipment – is yours up to standard?*

Dairy farmers rely on efficient and effective cooling equipment for milk storage prior to collection. Depending on the age of the cooling equipment, the refrigerant gas in use may be damaging to the ozone layer (ODS gas) and/or a potent greenhouse gas (F-gas) in the event of emissions. For this reason, certain refrigerant gases have been or are being phased out of use and are being replaced with alternatives. This brief guide aims to help farmers ensure they are compliant with requirements and ready for the future.

## *Bans and Phase Downs: What are the requirements?*

- ODS refrigerant gases referred to as HCFCs are no longer allowed for maintenance and servicing of milk coolers since 31<sup>st</sup> December 2014. This means that if equipment containing HCFC breaks down after that date, it cannot be topped up. The most common HCFC refrigerant is known as R22.

The following restrictions all apply to the commonly used F-gas refrigerant R404A.

- From 1st January 2020, the use of virgin F-gases with a Global Warming Potential (GWP) of 2500 or more to service or maintain existing refrigeration equipment with a charge size of 40 tonnes of CO<sub>2</sub> equivalent or more will be banned.
- From 1st January 2020, milk coolers (stationary refrigeration equipment) that contains, or whose functioning relies on, F-gases with GWP of 2,500 or more can no longer be placed on the market.
- From 1st January 2030, the use of reclaimed or recycled F-gases with a GWP of 2500 or more to service or maintain existing refrigeration equipment with a charge size of 40 tonnes of CO<sub>2</sub> equivalent or more will be banned.
- Beginning in 2016, the quantity of F-gases placed on the EU market is being phased down. This will result in a 79% reduction by 2030. This will result in the reduced availability of F-gases which are currently widely used in the dairy sector and is likely to lead to

higher prices when purchasing these gases in order to maintain your systems.

## *What must farmers do?*

Farmers must make sure not to leave themselves in a position where milk stock could be destroyed by breakdown in equipment that can no longer be serviced or where the cost of top-up gas has increased significantly and may be difficult to obtain.

There are two options that farmers can explore:

1. Replace the refrigerant gas with an alternative (generally an F-gas with a low GWP), drop-in replacement gas.
2. Replace the milk cooler with equipment running on an alternative refrigerant.

Refrigeration contractors will be best placed to advise farmers on which is the most suitable option.

## *How do I know which gas type my equipment contains?*

All systems are required to be labeled with the type and quantity of gas contained in the milk cooler. Generally, equipment that is more than 14 years old could potentially contain HCFC refrigerants such as R22. Refrigeration contractors can advise farmers about which refrigerant gas is contained in their system and what options are best to switch to an alternative gas.

## *How much will this changeover cost and is there a grant available?*

The cost of changing over to a more sustainable refrigerant gas will depend on which option a farmer decides to take, in consultation with the refrigeration maintenance contractor. The Department of Agriculture, Food and the Marine currently has a grant scheme in place for the modernization of dairy equipment. The Targeted Agricultural Modernisation Scheme (TAMS II) will accept applications for grant aid until 31 December 2020. Grant aid at a rate of 40% is available for investment in milk storage equipment and ancillary cooling equipment.

## *Ongoing maintenance requirements*

Regardless of the type of refrigerant gas in a system, the operator of the equipment (i.e. the farmer) must ensure that other legal requirements, summarized in the table on the next page, are complied with in respect of their milk cooling equipment.

## *Further Information:*

Further information is available from the Environmental Protection Agency at [www.ozone.ie](http://www.ozone.ie) or [www.fgases.ie](http://www.fgases.ie) or from the Department of Agriculture, Food and the Marine at [www.agriculture.gov.ie](http://www.agriculture.gov.ie).

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## What you must do to comply with the law

- 1 Containment of Gases:** Prevent leaks of refrigerant gases. Deliberate venting of F-gases is prohibited. Where leaks are detected, they should be repaired without undue delay.
- 2 Labeling:** Ensure the milk cooler equipment has a label attached to it in accordance with specified legal requirements. The label should include the gas type and quantity. A new label template must be used from 1<sup>st</sup> January 2016 for F-gases and you should replace current labels with the new label specification. Your refrigeration installation and/or maintenance contractor can supply this to you.
- 3 Leak Checking:** Have your systems checked for leaks and get it repaired as leaks will cost you money and are damaging to the environment. The following is a brief summary of requirements:
  - All newly installed equipment must be checked for leakage immediately after installation prior to the addition of gas.
  - A repaired leak must be leak checked by a certified contractor within one month.
  - Milk coolers containing above a specified quantity of gas must be periodically checked for leakage by a certified contractor. The type and quantity of gas installed determines whether and how often mandatory leak checking is required. The following non-exhaustive list is indicative of testing requirements for dairy farmers:
    - For ODS gas (such as R22) containing systems which are not hermetically sealed, annual leak testing is required for installed refrigerant quantities from 3 to 30 kg and 6 monthly testing from 30 to 300 kg. No testing is required for systems with less than 3 kg.
    - For F-gases, the current leak testing regime (which is the same as that for ODS gases above) expires on 31<sup>st</sup> December 2016.  
For F-gases, a new regime to better reflect the potential climate impact of individual gas types begins on 1<sup>st</sup> January 2017 as follows: annual leak testing for quantities of gas installed from 5 to 50 tonnes carbon dioxide equivalent (carbon dioxide equivalent = Global Warming Potential x weight of gas installed) and six monthly testing from 50 to 500 tonnes carbon dioxide equivalent. No testing is required for systems with less than 5 tonnes carbon dioxide equivalent. For instance, if a high Global Warming Potential refrigerant gas is installed, then a smaller quantity of gas will trigger mandatory leak testing. It may also mean that you may switch from requiring no leak testing at present to requiring it from 1<sup>st</sup> January 2017 (and vice-a versa) depending on the gas type installed.
- 4 Installation and Service Contractors:** Leak checks, as well as any maintenance and servicing carried out, may only be done by a properly certified contractor. This is to prevent unqualified individuals causing illegal emissions into the environment. If they are registered in Ireland, you can check their certification on [www.fgasregistration.ie](http://www.fgasregistration.ie).
- 5 Records:** Farmers and their contractors are required to maintain records for
  - Each piece of equipment containing F-gas which requires periodic leak checking, and
  - Equipment containing 3 kg of ODS or more.The records must contain information as specified in the Regulations and must be maintained for five years.
- 6 Waste Gas:** Gas taken from a system for which you have no further use is a hazardous waste and must be disposed of correctly. Your contractor may take the gas away for treatment if they have provided Prior Annual Notification to the EPA. You can check this on [www.ozone.ie](http://www.ozone.ie) before allowing them to take the gas away.
- 7 Decommissioning:** When decommissioning a milk cooler system, ensure all refrigerant gas is first removed by a qualified person for appropriate treatment.

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