



EFCTC NEWSLETTER

An update on fluorocarbons and sulfur hexafluoride

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LATEST F-GASES REGULATION AND MAC DIRECTIVE CONCILIATION TEXTS

The latest [F-Gases Regulation and MAC Directive texts](#), reflecting the agreement reached at conciliation, have been published, subject to minor changes and further translations.

Concerning the controversial issue of Austria and Denmark earlier stricter regulations, the Regulation states that *"The Member State in question shall notify the national measures to the Commission, accompanied by justification in support of those measures"*, that *"Such measures must be compatible with the Treaty"*.

HFCs PRACTICALLY CHOSEN FOR THEIR ENERGY EFFICIENCY IN REFRIGERATION

"At today's (2005) level of knowledge and expertise, practicality often leads to a choice of HFCs for good efficiency to be realistically achieved and maintained" is the [British Institute of Refrigeration \(IOR\) position](#) on the issue of [Energy Efficiency](#) and Refrigerant Choice.

Alternative refrigerants can in some cases be energy efficient, but they are not suitable for all applications. For all refrigerants, components improvements and design changes, experience and skills can be expected to improve the [refrigeration](#) and [air conditioning](#) energy efficiency.

Efficiency is primarily dependent on a good design, the selection of an appropriate system, good maintenance and not on the choice of the refrigerant. On the contrary, constraints on the use of specific refrigerant could result in less efficient systems being installed.

In most of the cases, the impact of the refrigerant choice on efficiency is likely to be less than 5%, assuming all other design parameters are optimised – but not taking into account additional energy consumption associated with necessary safety measures (like for example using indirect cooling instead of direct cooling, etc.).

By contrast, the system efficiency can be affected by large amounts- in the range of 20% to 50%, in the case of wrong design, or failing to consider items like:

- 1) Avoid refrigeration, or reduce the cooling load to what is really necessary.
- 2) Optimize the system design (selection of the refrigeration cycle, setting the appropriate cooling levels, etc.).



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- 3) Choose a reasonable control philosophy (optimize for average rather than to peak conditions; modern pressure control, variable speed compressors or pumps).
- 4) Optimise individual components (heat exchangers, compressor, etc.).
- 5) Operate and maintain the plant for best efficiency (a dirty condenser can use .20 % more energy).

Refrigerant choice matters, but many other design issues matter much more!

US REFRIGERATOR MANUFACTURERS JOIN EPA PROGRAM TO CUT HFC EMISSIONS

A voluntarily program to [reduce HFCs emissions](#) from new refrigerators and freezers has been launched by the [US EPA](#) and the Association of Home Appliance Manufacturers (AHAM). Emissions of HFC as [refrigerant](#) and as blowing agent in [insulation foam](#) will significantly be reduced in the manufacturing of 12 million refrigerator-freezers in the USA and more than 60 million worldwide each year.

HFC Emissions should be minimized at all stages of production of appliances:

- delivery, storage, and transfer of refrigerants and blowing agents
- factory piping
- blending and operations of foam blowing equipment
- foam injection
- refrigerant system charging
- testing
- scrapped material and refrigerant recovery
- product design

Source :

<http://yosemite.epa.gov/opa/admpress.nsf/7c02ca8c86062a0f85257018004118a6/28808694327059d0852570f4005e6a00!OpenDocument>

EFFICIENT COOLING WITH ICE THERMAL STORAGE USING HFC-134a

An innovative cooling system uses an ice slurry storage based on HFC-134a to distribute heat and cold in tall buildings.

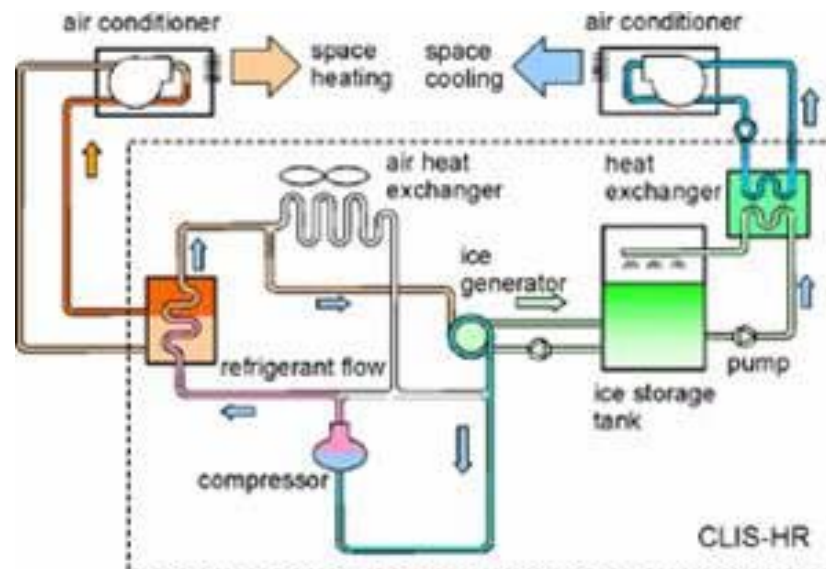
Ice making has a good COP (Coefficient of Performance), ice storage density allows a compact storage (45 kWh/m³), and the system can be placed anywhere in the building where space is available, because of its modular design and the pumpability

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of the ice slurry.

The system can be used in different modes

- Ice making operation
- Cooling operation
- Heating operation
- Combined operation with heat recovery (shown).





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The Ritz Carlton Plaza Hotel in Osaka (Japan) has a total height of 181m, its total floor area is 136,823 m². The complete system requires 31 HFC-134a ice generators of 260 kW capacity, 16 ice storage tanks of 140 or 70 m³, totaling a thermal storage capacity is 80,750 kWh.

The energy consumption for pumping and air-conditioning equipment is reduced to 8 W/m² instead of 12.5 with conventional air conditioning equipment.



Source: Equipment Manufacturer

NEW ON OUR SITE

- [F-Gas Regulation page](#) : latest status.
- [Coming Events](#) : a new page presenting a list of events of interest - monthly updated.