

Reliable and suitable for natural refrigerants Energy-efficient fans for refrigerated cabinets in supermarkets

The fans used in refrigerated display cases and bottle coolers in the commercial food sector have very long operating times. They offer great potential for saving energy. ebm-papst offers efficient fan concepts for applications for both medium and low temperature refrigeration systems.

The right fan for every application

For installation in refrigeration and freezing applications, ebm-papst provides modern fan concepts based on an extremely efficient, electronically commuted EC motor. Among the range of several energy-efficient motor variants, the energy-saving motor (ESM) is predestined for use in refrigerated cabinets. With an efficiency level of up to 70%, it consumes only one third of the power of a comparable shaded-pole motor. The compact EC motors are available both as OEM components for combining with a separate impeller and as complete plug & play systems. Whereas the axial series is designed for installation under shelves, the fans with a diagonal impeller are designed to be installed in the rear panel of refrigerated display cases. Thanks to their extremely flat design, these fans fit in confined spaces and they are well equipped to deal with the higher back pressure encountered in such situations. ebm-papst also provides the energy-saving NiQ motor for the sustainable conversion of relatively old refrigerated cabinets. It is mechanically compatible with existing shaded-pole motors and makes 1:1 replacement easy thanks to the identical installation dimensions.

Does it really have to be ATEX?

A further major issue with regard to refrigerated cabinets is the refrigerant used. Directive (EU) 517/2014, also known as the Fluorinated Gas Directive, has been in force since January 1, 2015. Alongside ammonia and CO₂, natural refrigerants such as isobutane, propane, and propene are becoming increasingly popular as an ecological alternative to (partially) halogenated refrigerants. When malfunctions occur, however, the non-toxic hydrocarbons can form readily explosive mixtures with air.

The motors and complete systems from ebm-papst satisfy the requirements of the European standard EN 60335-2-89 (household appliance standard – Particular requirements for commercial refrigerating appliances) as standard and can safely be used for cooling solutions in this sector. This is fully adequate for the majority of refrigerated display cases, as their cooling circuits work with the 150 g maximum refrigerant quantity required by the standard. In the case of high-capacity refrigeration circuits, it may be useful to split the circuits. If that is not possible, ebm-papst offers fans with an energy-saving motor in accordance with ATEX approval II 3G Ex nA IIA T4 Gc for refrigerant quantities exceeding 150 g. These fans comply with ATEX standard EN 60079 and are therefore also approved for use in large refrigerated display cases as well as composite and cascade systems using more than 150 g of flammable refrigerant.

Katrin Lindner
Trade press coordinator
Phone: +49 7938 81-7006
Katrin.Lindner@de.ebmpapst.com

Corinna Schittenhelm
Trade press coordinator
Phone: +49 7938 81-8125
Corinna.Schittenhelm@de.ebmpapst.com

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Press relations contact
ebm-papst Group

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Image 1: Energy-saving motor (ESM) for installation in refrigeration and freezing applications under shelves – energy saving and with speed control.

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Regulation (EU) No 517/2014
 on fluorinated greenhouse gases

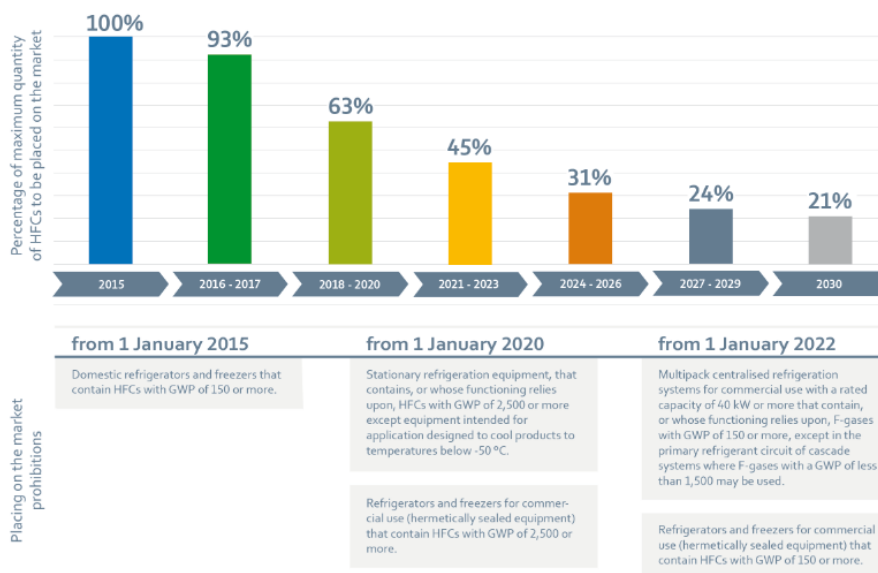


Image 2: “Fluorinated gases – Prohibitions on placement on the market”

Images 1 and 2
 Characters
 Tags

ebm-papst
 Approx. 2,900, including headlines and subheads
 EC technology, ESM, diagonal fan, energy saving,
 NiQ, ATEX, Fluorinated Gas Directive

Link www.ebmpapst.com/esm

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About ebm-papst

The ebm-papst Group is the world's leading manufacturer of fans and motors. Since it was founded, the technology company has continuously set global industry standards: from the digital interconnection of electronically controlled EC fans to aerodynamic improvements for fan blades to the use of eco-friendly materials.

In fiscal year 2017/18, the company achieved sales of over € 2 billion. ebm-papst employs over 15,000 people at 27 production sites (e.g. in Germany, China and the US) and in 48 sales offices worldwide. Fans and motors from the world market leader are used in many industries, including ventilation, air conditioning and refrigeration, household appliances, heating, automotive and drive engineering.

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