

Showcase Refrigeration System Based on Zero ODP and Low GWP Refrigerant (CO2)

AEON Retail Co., Ltd. is a general retail company with some 500 shops throughout Japan (as of February 2011).

From the viewpoint of climate change prevention, it is important to reduce the emissions of HFC refrigerants whose GWP is much higher than that of CO2. It is expected that the use of equipment containing HFC as the refrigerant will increase significantly at supermarkets; since the leakage of refrigerants from freezing and refrigerating equipment in operation and at the end of commercial life is difficult to prevent completely, the development of freezing systems based on natural refrigerants is needed as a matter of priority. AEON is the first supermarket company in Japan that started the test use of freezing showcases based on natural refrigerants in 2009. After repeated improvements, the system has become sufficiently energy efficient for business use.



AEON

Place: Himeji Aeon Town Shop
Company: AEON Retail Co., Ltd.
Location: 435-4 Nobusue, Himeji City,
Hyogo Pref., Japan
Technology: CO2 refrigeration system
Installation space:
W 1,800 × D 900 × H 1,200 mm
Facility: CO2-based refrigeration of 13 HP (1
unit); reach-in showcase refrigeration
system
2 m (3 units)/1.5 m (2 units)

AEON Natural Refrigerants Declaration

Aeon announced the Aeon Natural Refrigerants Declaration in November 2011. The declaration states that Aeon will progressively switch to natural refrigerant (CO2) for freezing and refrigeration cases throughout their Group stores, and that from 2015 on, all new stores will feature natural refrigerant systems.



CO2-based Showcases



Schematic Plan

- Energy consumption reduction: 25% (as compared with an R404A-based system of comparable performance)
- CO2 emission reduction: 15 tCO2/year (0.555 kgCO2/kWh)
31 tCO2/year (from refrigerant leakage reduction as compared with an R-404A-based system of comparable performance containing 50 kg of R404A with a leakage rate of 16% during operation.)