

Title (en)  
REFRIGERATING CYCLE APPARATUS, AND AIR-CONDITIONING APPARATUS

Title (de)  
KÄLTEZYKLUSVORRICHTUNG UND KLIMAANLAGE

Title (fr)  
APPAREIL À CYCLE DE RÉFRIGÉRATION, ET CLIMATISEUR

Publication  
**EP 2312241 B1 20191127 (EN)**

Application  
**EP 09770035 A 20090612**

Priority  
• JP 2009060790 W 20090612  
• JP 2008164655 A 20080624

Abstract (en)  
[origin: EP2312241A1] A compressor 1 for compressing a refrigerant containing a hydrofluoroolefin refrigerant, a condenser 2 for condensing the refrigerant by heat exchange, a throttle device 4 for decompressing the condensed refrigerant, an evaporator 5 for evaporating the refrigerant by heat exchange between the decompressed refrigerant and air, and air adsorbing means 3 for adsorbing oxygen and nitrogen are connected by piping so as to configure a refrigerant circuit through which the refrigerant containing the hydrofluoroolefin refrigerant is circulated.

IPC 8 full level  
**F25B 49/02** (2006.01); **F25B 1/00** (2006.01); **F25B 43/00** (2006.01); **F25B 43/04** (2006.01)

CPC (source: EP US)  
**F25B 43/003** (2013.01 - EP US); **F25B 43/043** (2013.01 - EP US); **F25B 2500/01** (2013.01 - EP US)

Citation (examination)  
• JP H04302967 A 19921026 - MATSUSHITA REFRIGERATION  
• "Oxygen enrichment of air for combustion processes - by alternate adsorption and desorption of nitrogen from atmospheric air by passage through sodium-aluminium-silicate zeolite having a specified pore size", DERWENT, 16 August 1993 (1993-08-16), XP002409709  
• USTINOV E A: "An analysis of the equilibrium adsorption of nitrogen, oxygen, and their mixtures on zeolite NaX at temperatures of from -20 to +30 DEG C", RUSSIAN JOURNAL OF PHYSICAL CHEMISTRY, NAUKA/INTERPERIODICA, MO, vol. 81, no. 2, 1 February 2007 (2007-02-01), pages 246 - 254, XP019486600, ISSN: 1531-863X, DOI: 10.1134/S0036024407020173

Cited by  
EP3404342A4; US11976860B2; US11913693B2; WO2020117592A1; US11686515B2; US11911724B2

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DOCDB simple family (publication)  
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JP WO2009157325 A1 20111208; US 2011079040 A1 20110407; WO 2009157325 A1 20091230

DOCDB simple family (application)  
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