Title (en)
AN ABSORPTION CYCLE HEAT PUMP

Publication
EP 0039545 B1 19840801 (EN)

Application
EP 81301565 A 19810410

Priority
• GB 8014897 A 19800503
• GB 8037720 A 19801125

Abstract (en)
[origin: EP0039545A2] An absorption cycle heat pump includes a generator 11 which contains a refrigerant and a solvent for the refrigerant and to which, in use, an external source of heat is applied to raise the temperature thereof such that a vapour rich in the refrigerant is expelled from the generator 11. A condenser 13, 16 is connected to the generator 11 so as to receive and condense the vapour expelled from the generator 11 in use, and an evaporator 19 is connected to the condeser 13, 16 through a heat exchanger 17 and valve means 18 so as to re-evaporate the condensed vapour into the evaporator 19. An absorber 21 is connected through the heat exchanger 17 to the evaporator 19, the absorber 21 and the generator 11 forming part of a series circuit 20 through which, in use, a liquid rich in the solvent flows from the generator 11 to the absorber 21 for recombination with the fluid from the evaporator 19. A pump in the series circuit 20 returns the recombined refrigerant and solvent from the absorber 21 to the generator 11. In order to ensure maximum thermodynamic efficiency when operating as a heat emitting device, the heat pump is arranged so that the normal boiling points difference of the solvent and the refrigerant is less than or equal to 200 DEG C and so that: a) evaporation of the condensed vapour into the evaporator is incomplete and the fluid leaving the evaporator 19 contains 5 to 30% by mass of liquid, and b) the refrigerant liquid in the fluid flowing from the evaporator 19 is evaporated in the heat exchanger 17 so that the fluid leaving the heat exchanger 17 is at between a maximum superheat of 2 DEG C and a flash ratio of 2%.

IPC 1-7
F25B 29/00; F24J 3/04

IPC 8 full level
F25B 29/00 (2006.01)

CPC (source: EP)
F25B 29/006 (2013.01)

Cited by
EP0198539A1; US4691525A; EP0162746A1; FR2563615A1

Designated contracting state (EPC)
BE DE FR GB IT

DOCDB simple family (publication)
EP 0039545 A2 19811111; **EP 0039545 A3 19820922**; **EP 0039545 B1 19840801**; DE 3165184 D1 19840906

DOCDB simple family (application)
EP 81301565 A 19810410; DE 3165184 T 19810410