

Title (en)
METHOD FOR PRODUCING VERY LOW TEMPERATURES

Title (de)
VERFAHREN ZUR TIEFSTTEMPERATURERZEUGUNG

Title (fr)
PROCEDE D'OBTENTION DE TRES BASSES TEMPERATURES

Publication
EP 0706632 B1 19980325 (FR)

Application
EP 94921676 A 19940704

Priority
• FR 9400818 W 19940704
• FR 9308201 A 19930705

Abstract (en)
[origin: US5657635A] PCT No. PCT/FR94/00818 Sec. 371 Date Apr. 17, 1996 Sec. 102(e) Date Apr. 17, 1996 PCT Filed Jul. 4, 1994 PCT Pub. No. WO95/02158 PCT Pub. Date Jan. 19, 1995 Temperatures of 0.2 DEG K or lower are achieved by feeding 3He and 4He separately into a mixing chamber (5) in an enclosure (3) in which the temperature is held at around 2 DEG K. The endothermal dilution of 3He into 4He provides the required cold. The resulting mixture (M) passes out of the mixing chamber and the enclosure while cooling the incoming fluids by means of exchangers (1, 12, 4). To compensate for thermal losses, the mixture (M) also undergoes Joule-Thompson expansion (12) optionally followed by evaporation (13), preferably between about 1.5 DEG and 2.5 DEG K, and the resulting cold is used to lower the temperature of the incoming fluids from well above 4 DEG K to between 1.5 DEG and 2.5 DEG K, which is close to the temperature prevailing inside the enclosure (13) containing the coldest point (6) in the circuit.

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