

Title (en)  
DILUTION REFRIGERATION DEVICE AND METHOD

Title (de)  
VERDÜNNUNGSKÜHLVORRICHTUNG UND VERFAHREN

Title (fr)  
DISPOSITIF ET PROCÉDÉ DE RÉFRIGÉRATION À DILUTION

Publication  
**EP 4107450 B1 20240403 (FR)**

Application  
**EP 21702045 A 20210203**

Priority  
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• EP 2021052495 W 20210203

Abstract (en)  
[origin: CA3168530A1] Dilution refrigeration device and method comprising a loop working circuit (20) containing a working fluid comprising a mixture of helium-3 (3He) and helium-4 (4He), the working circuit (20) comprising, arranged in series and fluidically connected via a first set of pipes (2, 4), a mixing chamber (3), an evaporator (5) and transfer member (6), the first set of pipes (2, 4) being configured to transfer the working fluid from an outlet of the mixing chamber (3) to an inlet of the evaporator (5) and from an outlet of the evaporator (5) to an inlet of the transfer member (6), the working circuit (20) comprising a second set of pipes (7) connecting an outlet of the transfer member (6) to an inlet of the mixing chamber (3), the working circuit (20) comprising at least a first heat-exchange portion (9) for exchange of heat between at least part of the first set of pipes (2, 4) and the second set of pipes (7), the first heat-exchange portion (9) being situated between the evaporator (5) and the mixing chamber (3), the device further comprising at least one cooling member (22, 12) in a heat-exchange relationship with the working circuit (20), the device comprising at least one cryogenic pumping member (8) situated in the working circuit (20) between the evaporator (5) and the transfer member (6).

IPC 8 full level  
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