

Title (en)

METHOD AND DEVICE FOR FILLING PRESSURE VESSELS WITH NON-LIQUEFIED GASES OR GAS MIXTURES

Title (de)

VERFAHREN UND VORRICHTUNG ZUM BEFÜLLEN VON DRUCKBEHÄLTERN MIT NICHT VERFLÜSSIGTEN GASEN ODER GASGEMISCHEN

Title (fr)

PROCEDE ET DISPOSITIF POUR REMPLIR DES RESERVOIRS SOUS PRESSION AVEC DES GAZ OU DES MELANGES DE GAZ NON LIQUEFIES

Publication

EP 1846691 A1 20071024 (DE)

Application

EP 06707704 A 20060111

Priority

- EP 2006050166 W 20060111
- DE 102005004665 A 20050202

Abstract (en)

[origin: WO2006082122A1] In order to be able to achieve high pressures, pressure vessels are filled according to the principle of "cold filling", i.e. the filler gas is filled into the pressure vessel in a cold state. Once the pressure vessel is filled and the gas is heated to ambient pressure, the pressure in the pressure vessels multiplies several times. A problem that often occurs is that during filling the filler gas or a component of the filler gas mixture freezes out, thereby resulting in a malfunction of the filling device. For this purpose, the filler gas is transported to the pressure vessel to be charged in a cold yet gaseous state. The filler gas is supplied to a heat exchanger in a liquefied state and is then evaporated. The evaporated filler gas or the gas component are returned to the heat exchanger, where it thermally contacts the still liquid filler gas and is cooled to at least approximately the temperature of the liquid filler gas. The gas treated in this manner is very cold but at the same time available in a gaseous state of matter.

IPC 8 full level

F17C 5/06 (2006.01); **F17C 9/02** (2006.01); **F17C 13/02** (2006.01)

CPC (source: EP)

F17C 5/06 (2013.01); **F17C 9/02** (2013.01); **F17C 13/025** (2013.01); **F17C 13/026** (2013.01); **F17C 2221/016** (2013.01); **F17C 2221/017** (2013.01); **F17C 2223/0161** (2013.01); **F17C 2223/033** (2013.01); **F17C 2223/046** (2013.01); **F17C 2225/0123** (2013.01); **F17C 2225/036** (2013.01); **F17C 2227/0121** (2013.01); **F17C 2227/0157** (2013.01); **F17C 2227/0306** (2013.01); **F17C 2227/0309** (2013.01); **F17C 2227/0339** (2013.01); **F17C 2227/0341** (2013.01); **F17C 2227/0388** (2013.01); **F17C 2227/0393** (2013.01); **F17C 2250/032** (2013.01); **F17C 2250/043** (2013.01); **F17C 2250/0439** (2013.01); **F17C 2250/0443** (2013.01); **F17C 2265/025** (2013.01); **F17C 2270/0181** (2013.01)

Citation (search report)

See references of WO 2006082122A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

DE 102005004665 A1 20060810; AT E519065 T1 20110815; EP 1846691 A1 20071024; EP 1846691 B1 20110803; WO 2006082122 A1 20060810

DOCDB simple family (application)

DE 102005004665 A 20050202; AT 06707704 T 20060111; EP 06707704 A 20060111; EP 2006050166 W 20060111