

Title (en)

Process and apparatus producing liquid oxygen and liquid nitrogen

Title (de)

Verfahren und Vorrichtung zur Erzeugung von flüssigem Sauerstoff und flüssigem Stickstoff

Title (fr)

Procédé et dispositif de production d'oxygène liquide et d'azote liquide

Publication

EP 1316767 A1 20030604 (DE)

Application

EP 02024689 A 20021105

Priority

DE 10158328 A 20011128

Abstract (en)

In a process to liquefy oxygen and nitrogen, gaseous oxygen and nitrogen is fed to a heat exchanger (41) and liquefied by indirect heat exchange. The cooled gases are compressed (3, 9) within a chilled (13) circuit, subject to adiabatic expansion (14, 24), warmed (13) and compressed (3, 9). The circulating fluid medium contains especially at least 10 mol % Argon. <??>The circulating fluid medium contains preferably 95 mol%. Oxygen and nitrogen are simultaneously introduced into the liquefaction heat exchanger (41). In an alternative first operating mode gaseous oxygen is introduced into the liquefaction (1) heat exchanger (41). In an alternative second operating mode gaseous nitrogen is introduced into the liquefaction (1) heat exchanger (41). The gases (1, 1a) are the product of cryogenic fractionated distillation of air. <??>An Independent claim is also included for a commensurate assembly.

Abstract (de)

Das Verfahren und die Vorrichtung dienen zur gleichzeitigen oder aufeinander folgenden Erzeugung von flüssigem Sauerstoff und flüssigem Stickstoff. Zu verflüssigendes Gas (Sauerstoff und/oder Stickstoff 1, 1a) wird in einem Verflüssigungs-Wärmetauscher (41) durch indirekten Wärmeaustausch mit einem Kreislaufmedium (40) verflüssigt. Das Kreislaufmedium wird in einem Kältekreislauf verdichtet (3, 9), abgekühlt (13), arbeitsleistend entspannt (14, 24) und mindestens teilweise verflüssigt, wieder angewärmt (13) und der Verdichtung (3, 9) zugeführt (6, 7, 15, 25, 27, 34, 35). Das Kreislaufmedium weist einen Argongehalt von mindestens 10 mol% auf. <IMAGE>

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Citation (search report)

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