

Title (en)

Process and device for the cryogenic distillation of air

Title (de)

Verfahren und Vorrichtung zur Tieftemperaturzerlegung von Luft

Title (fr)

Procédé et dispositif pour la séparation cryogénique d'air

Publication

EP 1653183 A1 20060503 (EN)

Application

EP 05256250 A 20051006

Priority

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Abstract (en)

Pressurised gaseous nitrogen ("GAN") is produced in a process in which liquid nitrogen ("LIN") is produced in a cryogenic air separation unit ("ASU") (124,150). The pressure of at least a portion of the LIN is increased (164) to produce pressurised LIN. A fluid (127) having an oxygen concentration at least equal to that of air is separated in an auxiliary cryogenic distillation column (196) to produce nitrogen-rich overhead vapour (159) and oxygen-enriched bottoms liquid (167). Heat and optionally mass is transferred (161) between at least a portion of the nitrogen-rich overhead vapour and at least a portion of the pressurised LIN to produce nitrogen-rich liquid and pressurised GAN (166). At least a portion (169) of said nitrogen-rich liquid is used as reflux to the ASU after suitable pressure adjustment (173). Such a process allows the production of high purity GAN without the loss of oxygen recovery typically observed in conventional pumped LIN cycles.

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