

Title (en)
Process and apparatus for air separation by cryogenic distillation

Title (de)
Verfahren und Vorrichtung zur Luftzerlegung durch Tieftemperaturdestillation

Title (fr)
Procédé et installation de séparation d'air par distillation cryogénique

Publication
EP 1189003 B1 20050126 (FR)

Application
EP 01402310 A 20010906

Priority
FR 0011932 A 20000919

Abstract (en)
[origin: EP1189003A1] The plant, comprising a high-pressure column (101), an intermediate pressure column (102) with a boiler (24), and a low pressure column (103), has no means for argon enrichment of a fluid containing between 3 and 20 per cent/mol of argon other than the three aforementioned columns. During operation a mixture of at least oxygen, nitrogen and argon is fed into the high-pressure column, where it is separated into oxygen-rich and nitrogen-rich fractions. Part of both fractions is fed to the low-pressure column, which operates at preferably above 4 bars, and the gas from the lower part of this column is sent to the boiler in the intermediate column and at least partially condensed before being returned to the low-pressure column. Oxygen-rich and nitrogen-rich fluids (31, 72) are then drawn from the low-pressure column; at least part of the nitrogen-rich fluid is at least partly condensed in a vaporizer/condenser linked to the low-pressure column, and at least part of the partly condensed fluid is fed back to the high-pressure column, but no fluid containing 3-20 per cent/mol of argon is enriched with argon in any column apart from the high-pressure, low-pressure or intermediate-pressure columns. An Independent claim is also included for the instillation for the cryogenic air separating procedure.

IPC 1-7
F25J 3/04

IPC 8 full level
F25J 3/04 (2006.01)

CPC (source: EP US)
F25J 3/0409 (2013.01 - EP US); **F25J 3/04309** (2013.01 - EP US); **F25J 3/04387** (2013.01 - EP US); **F25J 3/04448** (2013.01 - EP US); **F25J 2200/20** (2013.01 - EP US); **F25J 2240/10** (2013.01 - EP US)

Cited by
WO2020048634A1; CN106211791A; EP3620739A1; EP2634517A1; US9360250B2

Designated contracting state (EPC)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)
EP 1189003 A1 20020320; EP 1189003 B1 20050126; AT E288064 T1 20050215; CA 2357302 A1 20020319; DE 60108579 D1 20050303; DE 60108579 T2 20051222; FR 2814229 A1 20020322; FR 2814229 B1 20021025; US 2002053219 A1 20020509; US 6536232 B2 20030325; ZA 200107210 B 20020304

DOCDB simple family (application)
EP 01402310 A 20010906; AT 01402310 T 20010906; CA 2357302 A 20010913; DE 60108579 T 20010906; FR 0011932 A 20000919; US 95526101 A 20010919; ZA 200107210 A 20010830