

## Title (en)

Process and apparatus for producing gaseous oxygen under pressure

## Title (de)

Verfahren und Einrichtung zur Herstellung von gasförmigen Drucksauerstoff

## Title (fr)

Procédé et installation de production d'oxygène gazeux sous pression

## Publication

**EP 0689019 A1 19951227 (FR)**

## Application

**EP 95401443 A 19950619**

## Priority

FR 9407531 A 19940620

## Abstract (en)

Prodn. of gaseous oxygen is performed under pressure by air distn. in a double distn. column (7) contg. a medium pressure column (8), a low pressure column (9), and a heat exchanger (6) which contacts air to be distilled with prods. from the distn. columns. Liquid oxygen is extracted from the low pressure column. It is submitted to a vaporisation pressure of at least 13 bars and then vaporised and heated at this pressure by heat exchange with the inlet air. The process comprises: (i) compressing a first fraction of air to a medium pressure, cooling to its dew point in the heat exchanger and sending to the distn. columns; (ii) compressing a second fraction of the air to a high pressure of  $\geq 25$  bars i.e. below the condensation pressure of the air in the heat exchanger. The air is cooled and partially liquefied, that part of which is introduced into the distn. columns, and the rest passes through the heat exchanger at an intermediate temp. and is expanded to the medium pressure in a first turbine (4, 51) before being introduced into the distn. columns; (iii) at least one liq. prod. is extracted. <IMAGE>

## IPC 1-7

**F25J 3/04**

## IPC 8 full level

**C01B 13/02** (2006.01); **F25J 3/04** (2006.01)

## CPC (source: EP KR US)

**F25J 3/04018** (2013.01 - EP KR US); **F25J 3/04024** (2013.01 - EP KR US); **F25J 3/04054** (2013.01 - EP KR US);  
**F25J 3/04084** (2013.01 - EP KR US); **F25J 3/0409** (2013.01 - EP KR US); **F25J 3/04145** (2013.01 - EP KR US);  
**F25J 3/04236** (2013.01 - EP KR US); **F25J 3/04296** (2013.01 - EP KR US); **F25J 3/04303** (2013.01 - EP KR US);  
**F25J 3/04393** (2013.01 - EP KR US); **F25J 3/04412** (2013.01 - EP KR US); **F25J 2200/94** (2013.01 - EP); **F25J 2215/52** (2013.01 - EP KR US);  
**F25J 2215/54** (2013.01 - EP KR US); **F25J 2290/62** (2013.01 - EP KR US); **Y10S 62/913** (2013.01 - EP KR US)

## Citation (applicant)

- FR 9102917 A 19910311
- FR 9115935 A 19911220
- FR 9202462 A 19920302
- FR 9207662 A 19920623
- FR 9304274 A 19930409

## Citation (search report)

- [A] EP 0504029 A1 19920916 - AIR LIQUIDE [FR]
- [A] FR 2688052 A1 19930903 - GRENIER MAURICE [FR]

## Cited by

EP1067345A1; FR2943772A1; FR3014545A1; CN114909189A; EP0789208A1; FR2744795A1; US5735142A; EP2176610A4; WO2010109149A3; WO2015082860A3; KR100466917B1

## Designated contracting state (EPC)

BE DE ES FR GB IT LU NL SE

## DOCDB simple family (publication)

**EP 0689019 A1 19951227**; **EP 0689019 B1 19990728**; CA 2152010 A1 19951221; CN 1081782 C 20020327; CN 1120652 A 19960417; DE 69511013 D1 19990902; DE 69511013 T2 20000120; ES 2136259 T3 19991116; FR 2721383 A1 19951222; FR 2721383 B1 19960719; JP H08175806 A 19960709; KR 960001706 A 19960125; US 5596885 A 19970128; ZA 955051 B 19960215

## DOCDB simple family (application)

**EP 95401443 A 19950619**; CA 2152010 A 19950616; CN 95107033 A 19950620; DE 69511013 T 19950619; ES 95401443 T 19950619; FR 9407531 A 19940620; JP 15201595 A 19950619; KR 19950016344 A 19950620; US 41955595 A 19950410; ZA 955051 A 19950619