

Title (en)

PROCESS FOR PRODUCING AMMONIA FROM A NITROGEN- AND HYDROGEN-CONTAINING PROCESS GAS MIXTURE

Title (de)

VERFAHREN ZUR HERSTELLUNG VON AMMONIAK AUS EINEM STICKSTOFF UND WASSERSTOFF ENTHALTENDEN PROZESSGASGEMISCH

Title (fr)

PROCÉDÉ DE PRÉPARATION D'AMMONIAC À PARTIR D'UN MÉLANGE GAZEUX DE PROCÉDÉ CONTENANT DE L'AZOTE ET DE L'HYDROGÈNE

Publication

EP 3526166 A1 20190821 (DE)

Application

EP 17784609 A 20171006

Priority

- DE 102016219850 A 20161012
- EP 2017075456 W 20171006

Abstract (en)

[origin: WO2018069173A1] The present invention relates to a process for removing nitrogen and optionally further gas components having a relatively high molecular weight from an essentially nitrogen- and hydrogen-containing process gas mixture for ammonia synthesis, wherein according to the invention the removal of nitrogen and optionally further gas components of relatively high molecular weight is effected by means of at least one centrifugal separator (23). While the previously employed large industrial scale processes for removing nitrogen from air for producing pure oxygen or from synthesis gas for establishing a suitable hydrogen-nitrogen ratio for ammonia synthesis are based predominantly on the principle of low-temperature distillation, the concept proposed with the present invention is based on utilizing the markedly different molecular weights of the components of the synthesis gas in ammonia plants to separate them in a centrifugal field. Since in this way an excess of nitrogen may be removed from the process gas mixture in cost-effective fashion a secondary reformer (13) may be operated with an excess of air and the overall process optimized.

IPC 8 full level

B01D 53/24 (2006.01); **B04C 3/00** (2006.01); **B04C 3/06** (2006.01); **C01B 3/02** (2006.01); **C01C 1/04** (2006.01)

CPC (source: EP)

B01D 53/24 (2013.01); **C01B 3/025** (2013.01); **C01C 1/0447** (2013.01); **B01D 53/1475** (2013.01); **B01D 2256/10** (2013.01); **B01D 2256/16** (2013.01); **B01D 2257/102** (2013.01); **B01D 2257/504** (2013.01); **B04C 1/00** (2013.01); **C01B 2203/0205** (2013.01); **C01B 2203/0244** (2013.01); **C01B 2203/0288** (2013.01); **C01B 2203/043** (2013.01); **C01B 2203/0465** (2013.01); **C01B 2203/047** (2013.01); **C01B 2203/0475** (2013.01); **C01B 2203/0495** (2013.01); **C01B 2203/1258** (2013.01); **C01B 2203/142** (2013.01); **C01B 2203/146** (2013.01); **C01B 2203/148** (2013.01); **Y02P 20/151** (2015.11); **Y02P 20/52** (2015.11)

Citation (search report)

See references of WO 2018069173A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

DE 102016219850 A1 20180412; EP 3526166 A1 20190821; WO 2018069173 A1 20180419

DOCDB simple family (application)

DE 102016219850 A 20161012; EP 17784609 A 20171006; EP 2017075456 W 20171006