

Title (en)

METHOD OF STARTING UP A REACTOR FOR THE OXIDATIVE DEHYDROGENATION OF N-BUTENES

Title (de)

VERFAHREN ZUM ANFAHREN EINES REAKTORS ZUR OXIDATIVEN DEHYDRIERUNG VON N-BUTENEN

Title (fr)

PROCÉDÉ POUR LE DÉMARRAGE D'UN RÉACTEUR POUR LA DÉSHYDROGÉNATION PAR OXYDATION DE N-BUTÈNES

Publication

EP 3497073 A1 20190619 (DE)

Application

EP 17754659 A 20170808

Priority

- EP 16183316 A 20160809
- EP 2017070113 W 20170808

Abstract (en)

[origin: WO2018029215A1] Process for preparing butadiene from n-butenes, which has a start-up phase and an operating phase and the operating phase of the process comprises the steps: A) provision of a feed gas stream (a1) comprising n-butenes; B) introduction of the feed gas stream (a1) comprising n-butenes, an oxygen-comprising gas stream (a2) and an oxygen-comprising recycle gas stream (d2) into at least one oxidative dehydrogenation zone and oxidative dehydrogenation of n-butenes to butadiene, giving a product gas stream (b) comprising butadiene; C) cooling and compression of the product gas stream (b), giving at least one aqueous condensate stream (c1) and a gas stream (c2) comprising butadiene; D) introduction of the gas stream (c2) into an absorption zone and separation of incondensable and low-boiling gas constituents as gas stream (d) from the gas stream (c2) by absorption of the C4 hydrocarbons in an absorption medium, giving an absorption medium stream loaded with C4 hydrocarbons and the gas stream (d), and recirculation of the gas stream (d) as recycle gas stream (d2) to the oxidative dehydrogenation zone, where the start-up phase comprises the steps, in the order i) to iv): i) introduction of a gas stream (d2') having a composition corresponding to the recycle gas stream (d2) in the operating phase into the dehydrogenation zone and setting of the recycle gas stream (d2) to at least 70% of the total volume flow in the operating phase; ii) optionally additional introduction of a steam stream (a3) into the dehydrogenation zone; iii) additional introduction of the feed gas stream (a1) comprising butenes at a lower volume flow than in the operating phase and raising of this volume flow until at least 50% of the volume flow of the feed gas stream (a1) in the operating phase has been attained, with the total gas flow through the dehydrogenation zone corresponding to not more than 120% of the total gas flow during the operating phase; iv) additional introduction, when at least 50% of the volume flow of the feed gas stream (a1) comprising butenes in the operating phase has been attained, of an oxygen-comprising stream (a2) at a lower volume flow than in the operating phase and raising of the volume flows of the feed gas streams a1 and a2 until the volume flows in the operating phase have been attained, with the total gas flow through the dehydrogenation zone corresponding to not more than 120% of the total gas flow during the operating phase.

IPC 8 full level

C07C 5/48 (2006.01); **C07C 11/167** (2006.01)

CPC (source: EP KR US)

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Citation (search report)

See references of WO 2018029215A1

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