

Title (en)

PROCESS FOR PREPARING 1,3-BUTADIENE FROM N-BUTENES BY OXIDATIVE DEHYDROGENATION

Title (de)

VERFAHREN ZUR HERSTELLUNG VON 1,3-BUTADIEN AUS N-BUTENEN DURCH OXIDATIVE DEHYDRIERUNG

Title (fr)

PROCÉDÉ DE PRÉPARATION DE 1,3-BUTADIÈNE À PARTIR DE N-BUTÈNES PAR DÉSHYDROGÉNATION OXYDATIVE

Publication

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Application

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Priority

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Abstract (en)

[origin: WO2016150738A1] The invention relates to a process for preparing butadiene from n-butenes, comprising the steps of: A) providing a feedstock gas stream a1 containing n-butenes; B) feeding feedstock gas stream a1 containing n-butenes, an oxygenous gas and an oxygenous cycle gas stream a2 into at least one oxidative dehydrogenation zone and oxidatively dehydrogenating n-butenes to butadiene, resulting in a product gas stream b containing butadiene, unconverted n-butenes, steam, oxygen, low-boiling hydrocarbons, and high-boiling secondary components, with or without carbon oxides and with or without inert gases; Ca) cooling product gas stream b and optionally removing at least some high-boiling secondary components and steam, resulting in a product gas stream b'; Cb) compressing and cooling product gas stream b' in at least one compression and cooling stage, resulting in at least one aqueous condensate stream c1 and one gas stream c2 containing butadiene, n-butenes, steam, oxygen and low-boiling hydrocarbons, with or without carbon oxides and with or without inert gases; Da) absorbing the C4 hydrocarbons comprising butadiene and n-butenes in an aromatic hydrocarbon solvent as an absorbent stream A1 in an absorption column K1 and removing uncondensable and low-boiling gas constituents comprising steam, oxygen, low-boiling hydrocarbons, any carbon oxides, aromatic hydrocarbon solvent and any inert gases as a gas stream d2 from gas stream c2, resulting in an absorbent stream A1' laden with C4 hydrocarbons and a gas stream d2, and then desorbing the C4 hydrocarbons from the laden absorbent stream A1', resulting in a C4 product gas stream d1; Db) recycling at least part of gas stream d2 as a cycle gas stream a2 into the oxidative dehydrogenation zone. The disclosed method is characterized in that the content of aromatic hydrocarbon solvent in cycle gas stream a2 is limited to less than 1% by volume by bringing gas stream d2 discharged in removal stage Da) into contact with an at least partially circulating liquid absorbent stream A2 for aromatic hydrocarbon solvent A1 in another column K2 and limiting the water content in the liquid absorbent stream A2 to no more than 80% by weight.

IPC 8 full level

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CPC (source: CN EP KR US)

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C-Set (source: CN EP US)

CN

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2. **C07C 7/005 + C07C 11/167**
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4. **C07C 7/11 + C07C 11/167**

EP US

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2. **C07C 7/11 + C07C 11/167**
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