Title (en)

METHOD FOR THE OXIDATIVE DEHYDRATION OF N-BUTENES INTO 1,3-BUTADIEN

Title (de)

VERFAHREN ZUR OXIDATIVEN DEHYDRIERUNG VON N-BUTENEN ZU 1,3-BUTADIEN

Title (fr)

PROCÉDÉ POUR LA DÉSHYDROGÉNATION OXYDANTE DU N-BUTÈNE EN 1,3-BUTADIÈNE

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Application

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Abstract (en)

[origin: WO2014202501A1] The invention relates to a method for producing 1,3 butadien by means of the oxidative dehydration of n-butenes on a heterogenous particulate multimetal oxide catalyst which contains molybdenum as the active compound and at least one other metal and which is filled into the contact tubes (KR) of two or more tube bundle reactors (R-I, R-II), wherein a heat transfer medium flows around the intermediate space between the contact tubes (KR) of the two or more tube bundle reactors (R-I, R-II). The method includes a production mode and a regeneration mode which are carried out in an alternating manner. In the production mode, an n-butene-containing feed flow is mixed with an oxygen-containing gas flow and conducted as a supply flow (1) over the heterogenous particulate multimetal oxide catalyst filled into the contact tubes (KR) of the two or more tube bundle reactors (R-I, R-II), and the heat transfer medium absorbs the released reaction heat, minus the heat quantity used to heat the supply flow (1) to the reaction temperature in the production mode, by means of an indirect heat exchange and completely or partly dispenses the reaction heat onto a secondary heat transfer medium (H2Oliq) in an external cooler (SBK). In the regeneration mode, the heterogenous particulate multimetal oxide catalyst is regenerated by conducting an oxygen-containing gas mixture (3) over the catalyst and burning off the deposits accumulated on the heterogenous particulate multimetal oxide catalyst. The invention is characterized in that the two or more tube bundle reactors (R-I, R-II) have a single heat transfer medium circuit and as many of the two or more tube bundle reactors (R-I. R-II) as necessary are operated constantly in the production mode so that the released reaction heat, minus the heat quantity used to heat the supply flow (1) to the reaction temperature in the production mode, suffices to keep the temperature of the heat transfer medium in the intermediate spaces between the content tubes (KR) of all the tube bundle reactors (R-I, R-II) at a constant level with a variation range of maximally +/- 10 °C.

IPC 8 full level

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