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(54) Title: CATALYST FOR THE PRODUCTION OF 1,3-BUTADIENE COMPRISING AN ALUMINIUM-CONTAINING SUPPORT WITH HIGH FAVOURABLE WEIGHT HOURLY SPACE VELOCITY

(57) Abstract: The present invention relates to a supported catalyst comprising a support and 0.1 to 10 wt.% of tantalum, calculated as Ta₂O₅ and based on the total weight of the catalyst, wherein the supported catalyst further comprises from 50 to 350 ppm of aluminium and from 1 to 50 ppm of sodium, based on the total weight of the catalyst, respectively. Moreover, the invention relates to a catalyst reaction tube for the production of 1,3-butadiene comprising at least one packing of the supported catalyst as defined herein, to a reactor for the production of 1,3-butadiene comprising one or more of the catalyst reaction tubes as defined herein, and to a plant for the production of 1,3-butadiene comprising one or more of the reactors as defined herein. The invention also relates to a process for the production of 1,3-butadiene as defined herein and to a process for the production of the supported catalyst as defined herein. Finally, the present invention relates to the use of the supported catalyst as defined herein for the production of 1,3-butadiene from a feed comprising ethanol and acetaldehyde and to the use of aluminium in an amount in a range of from 50 to 350 ppm in a supported catalyst for the production of 1,3-butadiene from a feed comprising ethanol and acetaldehyde for increasing the 1,3-butadiene productivity of the catalyst.

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