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(54) Title: METHOD FOR SELECTIVE HYDROGENATION OF BUTADIENE EXTRACTION TAIL GAS AND SELECTIVE HYDROGENATION APPARATUS

(54) 发明名称: 丁二烯抽提尾气选择加氢方法及选择加氢装置

(57) Abstract: Provided are a method for selective hydrogenation of butadiene extraction tail gas and a selective hydrogenation apparatus. The method for selective hydrogenation of butadiene extraction tail gas comprises: (1) feeding alkyne-containing tail gas from a butadiene extraction apparatus into a feedstock tank, and optionally removing impurities entrained in said alkyne-containing tail gas prior to feeding into said feedstock tank; (2) pressurizing the carbon C4 raw material in the feedstock tank by a material feed pump to a pressure required for reaction, then combining with recycled C4 from a buffer tank at the outlet of a one-stage reactor and then entering a one-stage mixer, mixing with hydrogen in the one-stage mixer, then entering a one-stage reactor for one-stage hydrogenation reaction, and the obtained one-stage reaction stream flowing into a one-stage reactor outlet buffer tank; the hydrogen gas required for the reaction in the one-stage reactor being dispensed in a first manner of addition or a second manner of addition; the first manner of addition is: all of the hydrogen gas required for reaction entering by means of the one-stage reactor outlet buffer tank, then entering a one-stage reactor by means of a first path at the exit of one-stage reactor outlet buffer tank; the second manner of addition is: part of the hydrogen gas required for reaction entering by means of the one-stage reactor outlet buffer tank, then entering a one-stage reactor by means of a first path at the exit of one-stage reactor outlet buffer tank; the other part of the hydrogen entering by means of the one-stage mixer, then entering the one-stage reactor; (3) the one-stage reactor outlet buffer tank has no gas-phase discharge, and the liquid-phase product is divided into at least two strands, the first strand returning to the one-stage reactor as recycled C4, the second strand entering a stabilization column as stabilization column feed or being subjected to further hydrotreating, then entering the stabilization column; (4) separating via the stabilization column and then extracting a C4 hydrogenation product.

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— 包括国际检索报告 (条约第21条(3))。

(57) 摘要: 一种丁二烯抽提尾气选择加氢方法及选择加氢装置。该丁二烯抽提尾气的选择加氢方法包括: (1) 将来自丁二烯抽提装置的含炔烃尾气送入原料罐, 任选地在送入原料罐之前脱除所述含炔烃尾气中夹带的杂质; (2) 原料罐内的碳四原料经进料泵增压至反应所需压力后, 与来自一段反应器出口缓冲罐的循环碳四汇合后进入一段混合器, 在一段混合器中与氢气混合后进入一段反应器进行一段加氢反应, 反应得到的一段反应物流进入一段反应器出口缓冲罐; 一段反应器反应所需氢气通过第一加入方式或第二加入方式配入; 第一加入方式为: 反应所需的全部氢气通过一段反应器出口缓冲罐进入, 然后通过一段反应器出口缓冲罐出口的第一路进入一段反应器; 第二加入方式为: 反应所需的部分氢气通过一段反应器出口缓冲罐进入, 然后通过一段反应器出口缓冲罐出口的第一路进入一段反应器; 另一部分氢气通过一段混合器进入, 然后进入一段反应器; (3) 一段反应器出口缓冲罐无气相排放, 液相产品至少分为两股, 第一股作为循环碳四返回一段反应器, 第二股作为稳定塔进料或经过进一步加氢处理后进入稳定塔; (4) 经稳定塔分离后采出碳四加氢产品。