

[12] Patent

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[54] APPARATUS AND PROCESS FOR HEAT EXCHANGE WITH FLUID BEDS

[57] Abstract: Apparatus and process for heat exchange with fluid beds comprises heat-exchange tubes located longitudinally with respect to the axis of a fluidization zone with a rectangular pitch, one side of which having a length at least one and a half times the length of the other side and/or with a triangular pitch, having two sides each at least one and a half times the length of the shortest side reduces the impact of the heat-exchange tubes on the fluidization characteristics of the fluid bed. The invention is particularly suitable for oxidation reactions using molecular oxygen-containing gas in the presence of a fluid bed of fluidisable catalyst, such as (a) the acetoxylation of olefins, (b) the oxidation of ethylene to acetic acid and/or the oxidation of ethane to ethylene and/or acetic acid, (c) the ammoxidation of propylene and/or propane to acrylonitrile and (d) the oxidation of C4's to maleic anhydride.

No. of claims: 23

No. of figures: 4

