Multitube reactor, especially for catalytic gas-phase reactions

Abstract

In a relatively large multitube reactor in which a large amount of heat of reaction is generated or is required owing to the numerous reaction tubes (17) and has to be removed, it is proposed that the ratio of tube spacing t to external tube diameter d_a be made dependent on the reactor diameter or on the external tube bundle diameter d_{RBa}. At an external diameter of the reaction tube bundle (18) of more than 4 meters, a ratio of tube spacing d to external tube diameter d_a of at least 1.3 is preferred. Such a reactor can be used for carrying out catalytic gas-phase reactions, especially for carrying out exothermic or endothermic catalytic gas-phase reactions such as the preparation of phthalic anhydride (PA), acrylic acid (AA), methacrylic acid (MAA), acrolein, maleic anhydride (MA), glyoxal, phosgene, hydrocyanic acid or vinylformamide (VFA).

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