

Heat exchanger, reactor arrangement comprising this heat exchanger and method for cooling a reactor

Abstract

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The present invention relates to a heat exchanger (1) comprising

- a bundle of at least two heat exchanger tubes (3), wherein the bundle of heat exchanger tubes (3) has been vertically oriented and is terminated at the bottom by a heat exchanger tube plate (31),
 - 10 - a heat exchanger housing (5) surrounding the bundle of heat exchanger tubes (3), wherein a liquid heat-transfer medium (7) is passed around the bundle of heat exchanger tubes (3) in the heat exchanger housing (5),
 - a heat exchanger cap (9) sealing the top of the heat exchanger housing (5),
 - a heat exchanger bottom (11) sealing the bottom of the heat exchanger housing (5),
 - 15 - a feed point (13) for the heat-transfer medium (7), wherein said feed point is provided on the heat exchanger housing (5) and leads into the heat exchanger (1),
 - an outlet (15) for the heat-transfer medium (7), wherein said outlet is provided on the heat exchanger housing (5) and leads out of the heat exchanger (1),
 - an emergency relief port (17) disposed in proximity to the heat exchanger cap (9).
 - 20 The heat exchanger (1) comprises a safety device (19) disposed in proximity to the heat exchanger bottom (11).
- The present invention further relates to a reactor arrangement (101) comprising
- a reactor (27)
 - a heat exchanger (1) according to the present invention connected to the reactor (27),
 - 25 and
 - a pump (29) for circulating at least some of the liquid heat-transfer medium (7), wherein said pump is connected to the reactor (27) and/or the heat exchanger (1).

30 Finally, a method for controlling the temperature of a reactor (27) and the use of the of the heat exchanger (1) according to the present invention are described.

[Fig. 1]