Claims

1. A reactor system (1) comprising
- a reactor (3),
- at least one cooler (5) connected to the reactor (3),
- at least one pump (7) for circulating at least some of a liquid heat-transfer medium (9), wherein the pump (7) is connected to the reactor (3) and/or the at least one cooler (5) , and
- a container (11) for collecting the liquid heat-transfer medium (9), wherein the container (11) is connected via outlet lines (17a, 17b) to the lowermost points of the reactor (3) and/or the at least one cooler (5) respectively,
wherein the container (11) is disposed below the reactor (3) and/or the at least one cooler (5), wherein the container (11) is disposed at least partly below ground level and wherein the volume of the container (11) is 10% greater than the volume of the liquid heat-transfer medium (9) theoretically contained in the reactor (3) and/or the at least one cooler (5).

2. The reactor system (1) as claimed in claim 1, wherein the container (11) comprises a heating apparatus (13) for heating the liquid heat-transfer medium (9).

3. The reactor system (1) as claimed in claim 1 or 2, wherein the container (11) further comprises a pump (15).

4. The reactor system (1) as claimed in any one of claims 1 to 3, wherein the container (11) is connected to both the reactor (3) and/or the at least one cooler (5) via at least one return line (19).

5. The reactor system (1) as claimed in any one of claims 1 to 4, wherein the outlet lines (17a, 17b) and/or the return line (19) each comprise a heating apparatus.

6. The reactor system (1) as claimed in any one of claims 1 to 5, wherein
the reactor (3) is a shell-and-tube reactor for carrying out exothermic reactions and/or
the at least one cooler (5) is a salt-bath cooler and the liquid heat-transfer medium (9) is a salt melt.

7. The reactor system (1) as claimed in any one of claims 1 to 6, wherein the cooler (5) comprises an emergency relief (21) and a safety device (23).

8. The reactor system (1) as claimed in claim 7, wherein the reactor system (1) further comprises a separator (25) arranged downstream of the safety device (23) and a pipe (27).

9. The use of the reactor system (1) as claimed in any one of claims 1 to 8 for carrying out exothermic reactions.