



Setup details

Unistat® Tango® Nuevo w/ & Radleys reactor

Temperature range: -45...250 °C
 Cooling power: 0.7 kW @ 250...0 °C
 0.4 kW @ -20 °C

Heating power: 1.5 kW / 3 kW

Pump speed 3300 rpm

Hoses: 2x1 m; M24x1.5 (#9325)

HTF: DW-Therm (#6479)

Reactor: 1-litre jacketed glass reactor

Reactor contents: 0.75 litre M90.055.03 (#6259)

Specific heat capacity of 0.36 kcal / kg °C

Reactor stirrer speed: 200 rpm

Unistat® Tango® Nuevo w/

1-litre Radleys reactor

Requirement

This case study compares the heat up ramp of an un-insulated reactor over the same range as the previous case study which used a vacuum insulated 1-litre reactor.

Method

The Unistat 405w is connected to the reactor using two 1-metre insulated metal hoses. The reactor is filled with 0.75 litre of "M90.055.03", a silicon based HTF. The Unistat 405w was connected in its 3-phase option increasing the available heating power from 1.5 kW to 3 kW.

Results

This graphic shows the performance of a Unistat Tango Nuevo. In this case the temperature range is the same but the glass reactor is not insulated.

Insulated, the reactor heats to 180 °C from 20 °C in only 29 minutes to reach the required temperature as compared to approximately 35 minutes when the reactor is un-insulated.

Unistat® Tango® Nuevo – Radleys reactor un-insulated:

This graphic shows the performance of Unistat Tango Nuevo working with an un-insulated 1-litre glass reactor. It takes approximately 35 minutes to reach 180 °C from 20 °C.

