

Unistat® 610w

200 W (172 kcal/min.) and 300 W (258 kcal / hr) exothermic reactions at 0 °C in a Radleys 10-litre jacketed glass reactor

Requirement

A Unistat 610w is used to control process temperature during simulated exothermic reactions in a Radleys 10-litre glass reactor.

Method

The reactor and Unistat are connected with two M30x1.5 insulated metal hoses. The reactor is filled with 7.5 litre of "M90.055.03", a Huber supplied silicon based HTF.

Results

The heat generated by the 200 W simulated exothermic reaction results in a temperature rise of 2 °C. The Unistat 610w cools the jacket at a rate of 8.5 K/min. to -25.7 °C in order to bring the process temperature back to the set-point of 0 °C within 6 minutes. The second test with a simulated exothermic reaction of 300 W results in a process temperature rise of 3.5 °C. The jacket temperature rapidly cools to -37 °C in just 4 minutes and pulls the process temperature back to 0 °C in 8 minutes.

Setup details

Unistat® 610w & Radleys reactor

- Temperature range: -60...200 °C
- Cooling power: 7.0 kW @ 200...0 °C
6.4 kW @ -20 °C
3.3 kW @ -40 °C
0.8 kW @ -60 °C
- Heating power: 6.0 kW
- Hoses: 2x1.5 m; M30x1.5 (#6386)
- HTF: DW-Therm (#6479)
- Reactor: 10-litre jacketed glass reactor
- Reactor content: 7.5 litre M90.055.03 (#6259)
- Stirrer speed: 80 rpm
- Control: process

