

Unistat® 830

300 W (258 kcal / hr) and 600 W (516 kcal / hr) exothermic reactions in a DDPS 25-litre glass reactor

Requirement

A Unistat 830 is used to compensate the sudden temperature rise due to an exothermic reaction of 300 W and 600 W. The simulated heat input is introduced on a DDPS 25-litre glass reactor.

Method

The Unistat and reactor are connected using two 1.5-metre insulated metal hoses. The reactor is filled with 18.75 litre of "M90.055.03", a Huber supplied silicon based HTF.

Results

With the 300 W heat input the temperature rises by approx. 1.6 K and the Unistat needs approx. 9 minutes to bring back the process temperature down to the set-point. Meanwhile the 600 W heat addition results in approx. 4.3 K of temperature rises and within 18 minutes it is back under control at the set-point.

Setup details

Unistat® 830 & DDPS reactor

Temperature range:	-85...200 °C
Cooling power:	3.6 kW @ 0 °C 2.2 kW @ -60 °C 3.6 @ 0 °C 3.5 @ -20...-40 °C 2.2 @ -60 °C 0.7 @ -80 °C
Heating power:	3 kW
Hoses:	2x1.5 m; M38x1.5 (#6656)
HTF:	DW-Therm (#6479)
Reactor:	25-litre vacuum insulated jacketed glass reactor
Reactor contents:	18.75 litre M90.055.03 (#6259)
Reactor stirrer speed:	70 rpm
Control:	process

