

Unistat® 830

Cooling a Buchi Glas Uster 20-litre jacketed glass reactor to T_{min}

Requirement

This test is designed to determine the minimum achievable temperature that the Unistat 830 can cool a Buchi Glas Uster 20-litre reactor within 2 hours.

Method

The Unistat and reactor are connected using two 1.5-metre insulated metal hoses. The reactor is filled with 15 litre of "M90.055.03", a Huber supplied silicon based HTF.

Results

The „internal“ (jacket) temperature cools to -57 °C in the first 20 minutes before the cooling power begins to asymptote. The final temperatures of jacket and process are -77 °C and -66 °C respectively.

Setup details

Unistat® 830 & Buchi Glas Uster 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: 20-litre jacketed glass reactor

Reactor contents: 15 litre M90.055.03 (#6259)

Reactor stirrer speed: 70 rpm
 Control: process

