

Reference project shell and tube heat exchanger petrochemicals

Cleaning a shell and tube heat exchanger during operation

Task:

- › Shell and tube heat exchanger / heat exchanger in a petrochemical process
- › System downtime not feasible in the short term
- › Severe impairment of thermal performance as a result of deposits

Technical data:

- › Tube bundle heat exchanger: length approx. 5,000 mm, diameter approx. 1,000 mm
- › System pressure process water approx. 8.5 bar
- › Online monitoring of temperature, pressure and mass flow

Conclusion:

- › Comprex® cleaning increased the performance of the heat exchanger by 44 %. The time required for this was around 8 hours. The higher heat transfer capacity makes it possible to either increase the production volume in terms of time or to reduce the energy requirement while maintaining the same level of production.

More information:
comprex.de

Cleaning with the comprex® process:

- › Cleaning the process water side during ongoing operation
- › Use of nitrogen as an inert working gas for Comprex® cleaning (hazardous area)
- › Process monitoring during cleaning by the system operator
- › Adjustment of the cleaning intensity according to the system reaction

Result

- › Increase in heat transfer performance

Table 1: Comparison of the system parameters before and after Comprex® cleaning (at constant volume flow)

Process water	before	after
Inlet temperature	94°C	94°C
outlet temperature	85°C	81°C
Temperature difference	9K	13K
heat transfer capacity	100%	144%