Chemwork

Is there a way by which we can estimate duty of a heat exchanger, while knowing only its geometry, without using any software?

Waqas Manzoor
PROCESS ENGINEER (Design & Optimization)

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Vyankatesh Belapurkar
Process Head

Vyankatesh

Info.on process fluids is required. Q= U*A*LMTD
In this equation, you know only area. U can be assumed on basis of typical tables.LMTD needs to be estimated mathematically. Thus, you can arrive at Q ,which is exchanger duty. For this ,you do not have to have a software.

I can assist you if required.

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Lionel Sheikboudhou
Process Engineer

Lionel

Waqas, there is a simpler and more direct answer:
Make an energy balance on both cold and hot sides: Q = m*(Hout-Hin)
With: m mass flow and H mass enthalpy

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Lionel Sheikboudhou
Process Engineer

Lionel

Sorry I had missed the "without flowrate" in the OP.

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Fedi Abdeljawed
Process Engineer at OMV

Fedi

you can't at least you must have tema sheet for the heat exchanger

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