

cheg325 homework7 aspen problem

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we can do this by just setting up a flow sheet that has a mixer that takes in the appropriate mole ratio.

Navigate

Tools

Data Source

Run Mode

Run

Summary

Components

Selection

Petroleum

Nonconventional

Enterprise Database

Comments

Select components

Component ID	Type	Component name	Alias	CAS number
WATER	Conventional	WATER	H2O	7732-18-5
METHANOL	Conventional	METHANOL	CH4O	67-56-1
1-OCT-01	Conventional	1-OCTANOL	C8H18O-1	111-87-5

Find

Elec Wizard

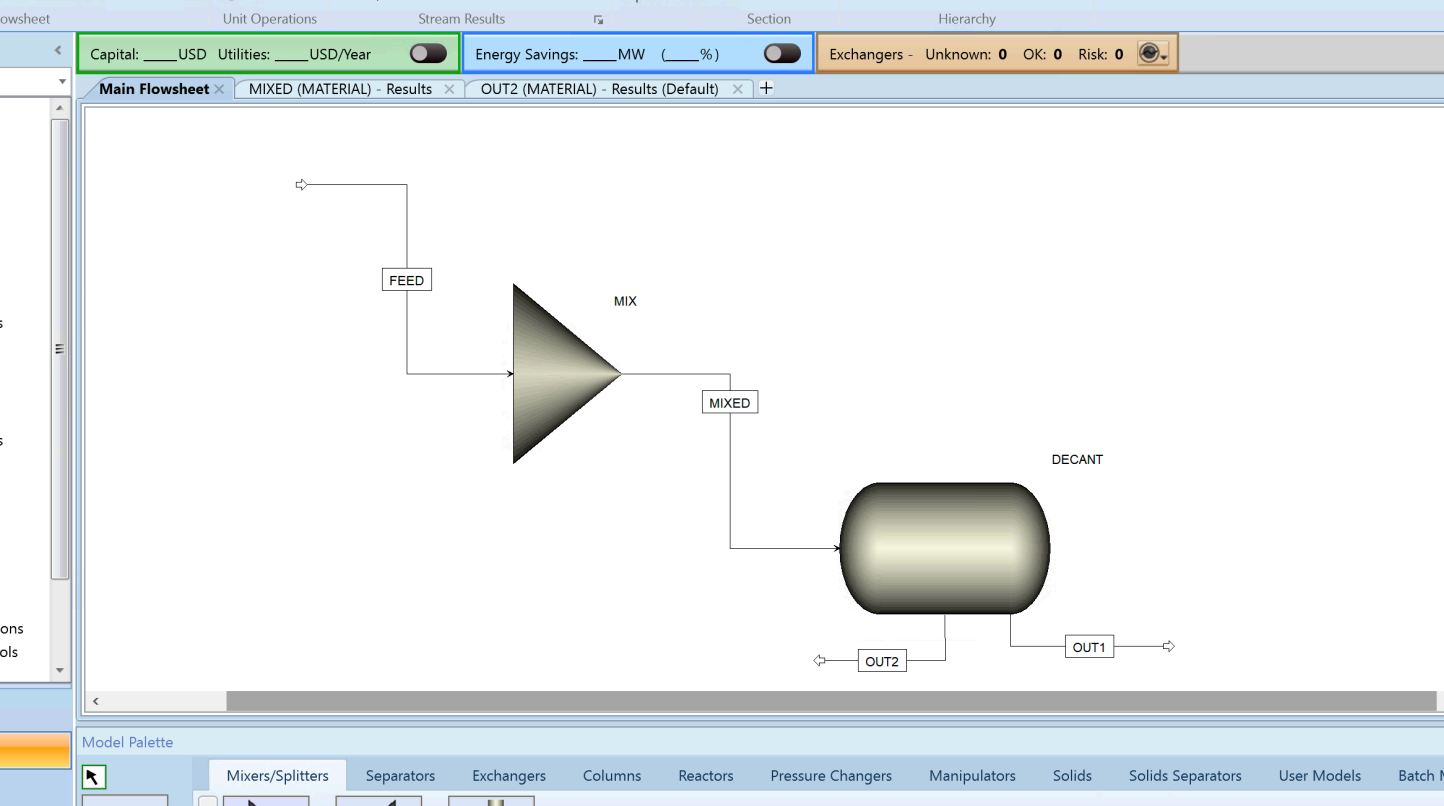
SFE Assistant

User Defined

Reorder

Review

and reading into chapter 12 of sandler's aspen text we see that he does this sort of calculation by using the decanter block.



Simulation

Capital: ____USD Utilities: ____USD/Year

Energy Savings: ____MW (____%)

Exchangers

Main Flowsheet

MIXED (MATERIAL) - Results (Default)

OUT1 (MATERIAL) - Input

OUT1 (MATERIAL) - R

Material	Vol.% Curves	Wt. % Curves	Petroleum	Polymers	Solids	Status
						OUT1
Molar Density						0.00865175
Mass Density						846.198
Enthalpy Flow						-0.0652091
Average MW						97.8066
Mole Flows						0.704655
WATER						0.19569
METHANOL						0.00904521
1-OCT-01						0.49992
Mole Fractions						
WATER						0.277711
METHANOL						0.0128364
1-OCT-01						0.709453
Mass Flows						68.9199
WATER						3.52541
METHANOL						0.289828
1-OCT-01						65.1047

now we can calculate the K_{OW} by using the formula given in the question and copy pasting the values from the streams

```
K = 0.0128363611277548/0.00312693797791961
print(f'K_ow = {K:.4f}')
```

```
import numpy as np
print(f'log10(K) = {np.log10(K):.4f}')
```

```
K_ow = 4.1051
log10(K) = 0.6133
```

```
# filler
```