3600

Specified production $\approx$ 13.6 L/min

$m_{-0} = 1200000\,g$

$k_A = 8.75 \times 10^{-6}\ g \cdot cm^2/(s \cdot bar)$ at 5 °C.

Ethanol rejection R_E = 4% (20 bar), 8% (30 bar) and 10% (40 bar).

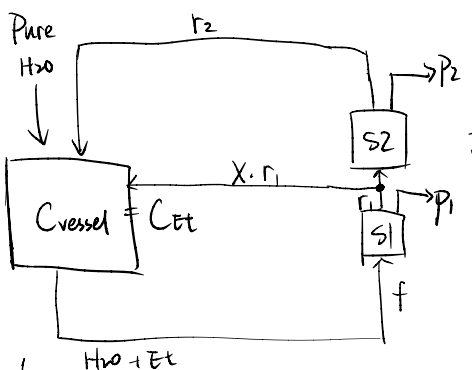
$J_A = k_A(\Delta P - \Delta\pi)$.

$R_E = 1 - \frac{C_{p,E}}{C_{f,E}}$ ← permeate / ← feed / bulk.

$J_E = C_{p,E} \cdot J_A = C_{f,E} \cdot (1-R_E) \cdot J_A$

① Include other solutes aromatics, in stream table?

② Pure H_2O



$J = k(\Delta P - \Delta\pi)$. (C. const.)

$C_p = (1-R)C_B$ ✓.

$R = 1 - \frac{C_p}{C_B}$

$\frac{d(C_{Et} \cdot V)}{dt} = \dot{M}_{r_1} C_{r_1} + \dot{M}_{r_2} C_{r_2} - \dot{M}_f \cdot C_{Et}$.

$\frac{dV}{dt} = \dot{V}_{water} + \dot{V}_{r_2} + \dot{V}_{r_1} - \dot{V}_f = 0$.

For separator 1,

$\dot{V}_f C_{Et} = \dot{V}_{p1}(1-R)C_{Et} + \dot{V}_{r_1} C_{r_1}$ (C_{p1})

$C_{r_1} = f(C_{Et})$.

Sep 2,

$(1-X)\dot{V} C_{r_1} = \dot{V}_{p2}(1-R)C_{r_1} + \dot{V}_{r_2} C_{r_2}$

$C_{r_2} = f(C_{r_1}) = f(C_{Et})$.