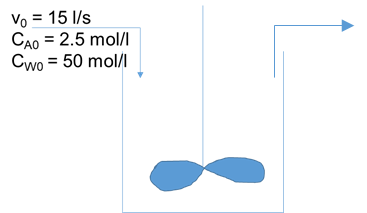
The reaction taking place in the CSTR is:

(CH3CO)2O + H2O 🡪 2CH3COOH

or A + W 🡪 2P

-rA = kCACW = 0.0075 CACW mol/l.s



The performance equation for a CSTR is given as:

Substituting,

For a liquid-phase reaction, under constant volume conditions,

And concentration of water based on 1:1 stoichiometric coefficients of the reactants in the balanced equation, can be written as,

Substituting in performance equation,

Solving the above equation,

XA = 0.97