Assignment 1

A tank is initially full of pure water at 3 atm and 35°C. Two components A and B are added continuously at a flow rate of 10 liters per minute each, with the composition of A and B being 50% and 50% respectively. The tank is well-stirred, and the temperature is maintained at 35°C.

1. Determine the concentration of A and B in the tank as a function of time. Assume ideal behavior.

2. If the tank is not well-stirred, how will the concentration of A and B change over time? Assume non-ideal behavior.

3. Calculate the total amount of A and B in the tank after 1 hour.

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5. Calculate the total amount of A and B in the tank after 1 hour.

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34. If the tank is not well-stirred, how will the concentration of A and B change over time? Assume non-ideal behavior.

35. Calculate the total amount of A and B in the tank after 1 hour.

36. If the tank is not well-stirred, how will the concentration of A and B change over time? Assume non-ideal behavior.

37. Calculate the total amount of A and B in the tank after 1 hour.