

Solutions

2.1 A Use percentage change to compare samples with different initial masses. A zero percentage change estimates a solution concentration with no net water movement. This is an estimate from a trend, not proof that water molecules stop moving.

2.2 percentage change = $(3.60 - 4.00) / 4.00 \times 100 = -10\%$.

2.3 False. Blotting removes surface solution. Weighing a wet cylinder without blotting adds liquid that did not enter the cells. Repeats reduce random variation but do not correct a miscalibrated balance.

2.4 osmosis. osmosis means Net water movement through a partially permeable membrane.

3.1 Zero is $4/6$ of the interval: $0.20 + (4/6) \times 0.30 = 0.40$ mol/L. This assumes local linearity and comparable conditions; repeat around the crossing. Zero net mass change does not mean molecules stop moving.