

Ex 4 (6) ^{solute} 7g (i=1) in ^{solvent} 45g H₂O

Find MW

$K_f = 1.86 \text{ } ^\circ\text{C}/m$

$\Delta T = 2.56$

FP pure H₂O = 0°C

Soln(aq) FP = -2.56°C

$\Delta T = (K \times M) i$

$2.56 = (1.86 \times M) 1$

$M = 1.38m$

1.38 moles NE
1 kg H ₂ O

$\frac{1.38 \text{ moles}}{1 \text{ kg}} = 0.062 \text{ moles}$

$\frac{\text{moles}}{1} = \frac{g}{\text{MW}}$

$\frac{\text{MW}}{1} = \frac{g}{\text{mole}}$

$= \frac{7g}{0.062 \text{ moles}}$

$= 113.02 \text{ g/mole}$

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(2) 1.4g PE + BZ = 100ml soln.

Find MW PE

$(P) = \pi = \frac{gRT}{V}$

$T = 25^\circ\text{C}$

$PV = \Delta RT$

$\frac{PV}{T} = \frac{gRT}{\text{MW}}$

$\text{MW} = \frac{gRT}{PV}$

$= \frac{(1.4)(0.08206)(298)}{\left(\frac{1.86}{260}\right)(0.1)}$

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Ex 2 Find M ($\frac{\text{moles}}{\ell}$)

55% AA = 55g AA / 100g soln
mw 60g/mole

$d = \frac{1.07\text{g}}{\text{ml}}$

55g AA	1 mole AA	1.07g	1000ml	=
100g soln	60g AA	1ml	18	

Mole = $\frac{g}{\text{mw}} = \frac{55}{60} = 0.92 \text{ moles}$

$\frac{100\text{g soln}}{1.07\text{g}} = 93.46 \text{ ml}$

$M = \frac{\text{moles}}{\ell} = \frac{0.92 \text{ mole}}{0.09346 \ell}$

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