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Solution: We can build on the previous calculation. We determined that the solution is 6 molal. Therefore, the total number of moles (ethylene glycol and water) is:

$$n_{\text{C}_2\text{O}_2\text{H}_6} + n_{\text{H}_2\text{O}} = 6 + 55.6 = 61.6 \text{ mol}$$

The mole fraction of ethylene glycol is

$$x_{\text{C}_2\text{O}_2\text{H}_6} = \frac{n_{\text{C}_2\text{O}_2\text{H}_6}}{n_{\text{C}_2\text{O}_2\text{H}_6} + n_{\text{H}_2\text{O}}} = \frac{6}{61.6} = 0.097$$