

$$\text{Percent Purity (\%)} = 100 \times \frac{mg_{std} \times MW_{cpd} \times \text{molar ratio}}{mg_{cpd} \times MW_{std}}$$

mg_{std} = mass of internal standard in mg

MW_{cpd} = molecular weight of target compound

$$\text{molar ratio} = \frac{I_{cpd}/nH_{cpd}}{I_{std}/nH_{std}}$$

I_{cpd} = proton integral area of a known peak on the compound being analyzed

nH_{cpd} = number of hydrogens associated with the compound NMR peak

I_{std} = proton integral area of a known peak on the standard

nH_{std} = number of hydrogens associated with the standard NMR peak

mg_{cpd} = mass of target compound in mg

MW_{std} = molecular weight of internal standard compound

$$\text{Percent Purity (\%)} = 97.6\%$$

$$= 100 \times \frac{14.8 \times 232.32 \times (\frac{2/2}{2.84/3})}{21.9 \times 168.19}$$

