**The Mole: Empirical and Molecular Formula: Quiz 5a**

**Make sure to SHOW ALL WORK and INCLUDE UNITS!**

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1. A sample of an unknown compound was analyzed and found to contain 8.4 grams of carbon, 2.1 grams of hydrogen and 5.6 grams of oxygen. Find the empirical (or simplest) formula for this compound.

Answers:

In our question the *smallest number of moles* is **0.35** mol for the oxygen.



*Dividing each by 0.35, we get*:



8.4 g of C x 1 mol of C = 0.6994 mol of C --- > 0.6994 mol of C = 2 mol C

 12.01 g 0.35



2.1 g of H x 1 mol of H = 2.079 mol of H --- > 2.079 mol of H = 6 mol H

 1.01 g 0.35



5.6 g of O x 1 mol of O = 0.3500 mol of O --- > 0.3500 mol of O = 1 mol O

 16.00 g 0.35



**C2H6O**