

# Molecular Formulas

Finding the molecular formula of an unknown compound is an important technique in pharmaceutical research, environmental toxicology and forensics.

\* Remember that the empirical formula is just the molecular formula reduced.

## Finding molecular formulas

Molecular Multiplier = Molar mass/ Empirical Mass

\* We find the molar mass using a mass spec

Ex 1. A compound with the empirical formula CH has a molar mass of 39.06 g/mol. What is the molecular formula?

Ex 2. An unknown compound contains 55.4% C, 7.8 % H and 36.8 % O. Mass spec analysis concludes that the compound has a molar mass of 390.48 g/mol. Identify the compound.