

Combustion Analysis

Reacting a known mass of a compound with O_2 (g) to produce CO_2 (g), H_2O (g), NO_x and/or SO_x compounds that are collected and weighed.

Example- A 0.255 g sample of compound containing only the elements **C**, **H** and **O** was reacted with O_2 (g) completely to produce the following:

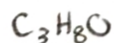
Compound
0.561 g CO_2 (g) (44.01 g/mol)
0.306 g H_2O (g) (18.01 g/mol)

Determine the formula of the compound.

Combustion Analysis

Compound	Moles	Mass (g)
0.561 g CO_2 (44.01 g/mol)	Moles C = 0.0128	Mass C = 0.153
0.306 g H_2O (18.01 g/mol)	Moles H = 0.034	Mass H = 0.0343
	Moles O = 0.0043	Mass O = 0.068

Mole Ratios



Writing and Balancing Chemical Equations (by Inspection)

Identities of reactants (initial state) and products (final state)

Relative numbers of each

Physical states

Solid (s)

Liquid (l)

Gas (g)

Dissolved in water (aqueous solution) (aq)

Balancing chemical equations (by inspection)

Start with the most complicated species first.

Balance H's and O's last.

Combustion Reactions

