

Knowledge



1. The number of protons
2. Protons and neutrons

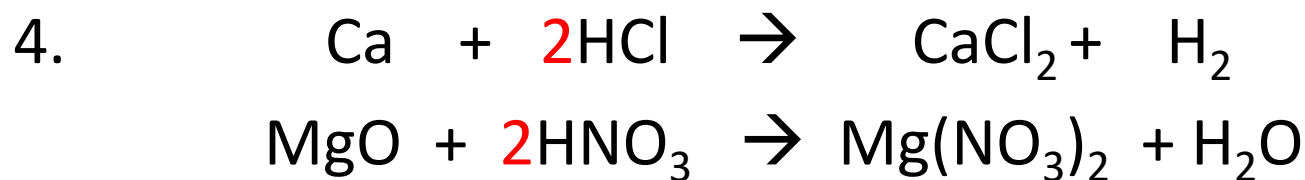
3.

Particle	Charge	Mass
Protons	+	1
Neutrons	0	1
electrons	-	0

4. Two or more elements chemically bonded together
5. Ionic
6. Molecules
7. 4
8. 6
9. Electrons
10. An atom with the same number of protons but different number of neutrons

Application

1. A magnesium atom contains 12 positively charged protons and 12 neutrons in its nucleus. The neutrons are neutral. There are also 12 electrons, orbiting in shells around the nucleus, 2 in the first shell, 8 in the second and 2 in the third.
2. Subtract the atomic number from the mass number
3. Lithium has 3 protons and 4 neutrons in the nucleus and $3+4 = 7$



5.

Compound formula	Number of elements contained in the compound	Number of atoms in the compound
NH ₃	2	4
CaCO ₃	3	5
Na ₂ S ₂ O ₃	3	7

6. Both isotopes are Carbon and have 6 protons and 6 electrons. However, C-13 has 7 neutrons, whereas C-12 only has 6

$$\begin{aligned} 7. & (0.79 \times 24) + (0.10 \times 25) + (0.11 \times 26) = \\ & 18.96 + 2.5 + 2.86 \\ & = 24.32 \end{aligned}$$

To 3 sig figs = 24.3

Extension

- An atom of sodium is neutral overall because it has the same number of positive protons (11) as negative electrons (11). As an ion, sodium loses one electron, so now has 11 protons and 10 electrons, so it has a 1+ charge