Atoms, molecules and stoichiometry

A-Level Chemistry · Vocabulary in context

Word	Example
atom /'ætəm/	An **atom** has a nucleus and electrons.
unified atomic mass unit /ju:nɪfaɪd ə'tɒmɪk mæs 'ju:nɪt/	A proton has a mass of about one **unified atomic mass unit**.
relative atomic mass /'relətɪv ə'tɒmɪk mæs/	Chlorine has a **relative atomic mass** of 35.5. 35.5
isotope /'aɪsətəʊp/	Carbon-14 is an **isotope** of carbon. Carbon-14
relative isotopic mass /'relətɪv ˌaɪsə'tɒpɪk mæs/	Chlorine-37 has a **relative isotopic mass** of 37. Chlorine-37 37
relative molecular mass /'relətɪv mə'lekjʊlə mæs/	Water has a **relative molecular mass** of 18. 18
molecule /'mɒlɪkju:l/	A water **molecule** has two hydrogen atoms and one oxygen atom.
relative formula mass /'relətɪv 'fɔ:mjʊlə mæs/	Sodium chloride has a **relative formula mass** of 58.5. 58.5
mole /məʊl/	One **mole** of carbon has a mass of 12 g. 12 g
Avogadro constant /ˌævə'gædrəʊ 'kɒnstənt/	The **Avogadro constant** is the number of particles in one mole.
ion /'aɪɒn/	An **ion** is an atom that has gained or lost electrons.
molar mass /'məʊlə mæs/	The **molar mass** of water is 18 g/mol. 18 g/mol

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compound /'kɒmpaʊnd/	Water is a **compound** of hydrogen and oxygen.
ionic compound /aɪ'ɒnɪk 'kɒmpaʊnd/	Sodium chloride is an **ionic compound**.
oxidation number /ˌɒksɪ'deɪʃn 'nʌmbə/	In H2O, oxygen has an **oxidation number** of −2. H2O −2
balanced /'bælənst/	A **balanced** equation has the same atoms on both sides.
state symbols /steɪt 'sɪmblz/	The **state symbols** (s), (l), (g) and (aq) show the state of each substance. (s)、(l)、(g) (aq)
aqueous /'eɪkwɪəs/	Salt dissolved in water gives an **aqueous** solution.
ionic equation /aɪ'ɒnɪk ɪ'kweɪʒn/	The **ionic equation** for neutralisation is H+ + OH− → H2O. H+ + OH− → H2O
spectator ions /spek'teɪtə 'aɪɒnz/	Na+ and Cl− are **spectator ions**: they do not change. Na+ Cl−
empirical formula /em'pɪrɪkl 'fɔ:mjʊlə/	The **empirical formula** of glucose is CH2O. CH2O
molecular formula /mə'lekjʊlə 'fɔ:mjʊlə/	The **molecular formula** of glucose is C6H12O6. C6H12O6
water of crystallisation /'wɔ:tə ɒv ˌkrɪstəlaɪ'zeɪʃn/	Blue copper sulfate crystals contain **water of crystallisation**.
hydrated /haɪ'dreɪtɪd/	**Hydrated** copper sulfate is blue.
anhydrous /æn'haɪdrəs/	**Anhydrous** copper sulfate is white.

Word	Example
stoichiometry /ˌstəʊɪkɪˈɒmətri/	**Stoichiometry** tells us how many moles of each substance react.
percentage yield /pəˈsentɪdʒ jiːld/	We made 8 g out of a possible 10 g: an 80% **percentage yield**. 10 g 8 g 80%
limiting reagent /ˈlɪmɪtɪŋ rɪˈeɪdʒənt/	The **limiting reagent** runs out first.
excess reagent /ekˈses rɪˈeɪdʒənt/	Some of the **excess reagent** is left over at the end.
hydrocarbons /ˈhaɪdrəkɑːbənz/	Methane and ethene are **hydrocarbons**.
concentration /ˌkɒnsənˈtreɪʃn/	The **concentration** of the acid is 2 mol/dm^3. 2 mol/dm^3
solute /ˈsɒljuːt/	Salt is the **solute** in salt water.
solution /səˈluːʃn/	Salt water is a **solution**.
titration /taɪˈtreɪʃn/	A **titration** finds the exact volume of acid needed.
significant figures /sɪgˈnɪfɪkənt ˈfɪgəz/	The number 0.0450 has three **significant figures**. 0.0450

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