Atoms, elements and compounds

IGCSE Chemistry · Vocabulary in context

Word	Example
element /ˈelɪmənt/	Each **element** of the array holds one value.
atom /ˈætəm/	An **atom** has a nucleus and electrons.
compound /ˈkɒmpaʊnd/	Water is a **compound** of hydrogen and oxygen.
mixture /ˈmɪkstʃə/	Air is a **mixture** of gases.
nucleus /ˈnjuːklɪəs/	The **nucleus** is at the centre of an atom.
electrons /ɪˈlektrɒnz/	**Electrons** move around the nucleus.
shells /ʃelz/	Electrons are arranged in **shells** around the nucleus.
protons /ˈprəʊtɒnz/	The number of **protons** gives the atomic number.
neutrons /ˈnjuːtrɒnz/	**Neutrons** have no charge.
charge /tʃɑːdʒ/	A proton has a positive **charge**.
proton number /ˈprəʊtɒn ˈnʌmbə/	Carbon has a **proton number** of 6. 6
atomic number /əˈtɒmɪk ˈnʌmbə/	Carbon has an **atomic number** of 6. 6
mass number /mæs ˈnʌmbə/	Carbon-12 has a **mass number** of 12. Carbon-12 12
nucleon number /ˈnjuːklɪən ˈnʌmbə/	The **nucleon number** counts protons and neutrons.

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electronic configuration /ɪlekˈtrɒnɪk kənˌfɪgjəˈreɪʃn/	The **electronic configuration** of sodium is 2,8,1. 2,8,1
Periodic Table /ˌpɪərɪˈɒdɪk ˈteɪbl/	The **Periodic Table** lists all the elements.
Group /gruːp/	Elements in the same **Group** have the same number of outer electrons.
Period /ˈpɪərɪəd/	Elements in the same **Period** are in the same row.
noble gases /ˈnəʊbl ˈgæsɪz/	Helium and neon are **noble gases**: they hardly react.
isotopes /ˈaɪsətəʊps/	Carbon-12 and carbon-14 are **isotopes**. Carbon-12 carbon-14
relative atomic mass /ˈrelətɪv əˈtɒmɪk mæs/	Chlorine has a **relative atomic mass** of 35.5. 35.5
abundance /əˈbʌndəns/	Chlorine-35 has an **abundance** of 75%. Chlorine-35 75%
ion /ˈaɪɒn/	An **ion** is an atom that has gained or lost electrons.
cation /ˈkætaɪən/	Sodium loses one electron to form a **cation**.
anion /ˈænaɪən/	Chlorine gains one electron to form an **anion**.
ionic bond /aɪˈɒnɪk bɒnd/	An **ionic bond** is the attraction between oppositely charged ions.
electrostatic attraction /ɪˌlektrəʊˈstætɪk əˈtrækʃn/	**Electrostatic attraction** pulls positive and negative ions together.
metal /ˈmetl/	Copper is a **metal** that conducts electricity well.

Word	Example
non-metal /nɒn 'metl/	Sulfur is a **non-metal**.
ionic compound /aɪ'ɒnɪk 'kɒmpaʊnd/	Sodium chloride is an **ionic compound**.
molecules /'mɒlɪkju:lz/	Water is made of **molecules**.
lattice /'lætɪs/	The ions in salt sit in a regular **lattice**.
alternating /'ɔ:ltəneɪtɪŋ/	In an ionic crystal, positive and negative ions are **alternating**.
melting point /'meltɪŋ pɔɪnt/	The **melting point** of ice is 0 °C. 0 °C
boiling point /'bɔɪlɪŋ pɔɪnt/	The **boiling point** of water is 100 °C. 100 °C
electrical conductivity /ɪ'lektrɪkl kɒndək'tɪvɪti/	Copper has a high **electrical conductivity**.
molten /'məʊltn/	**Molten** salt conducts electricity because its ions can move.
aqueous /'eɪkwɪəs/	Salt dissolved in water gives an **aqueous** solution.
covalent bond /'kəʊvələnt bɒnd/	A **covalent bond** is a shared pair of electrons.
intermolecular forces /ˌɪntəmə'lekjʊlə 'fɔ:sɪz/	Weak **intermolecular forces** let a gas boil at a low temperature.
giant covalent structure /'dʒaɪənt 'kəʊvələnt 'strʌktʃə/	Diamond has a **giant covalent structure**.
diamond /'daɪəmənd/	**Diamond** is the hardest natural material.

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Word	Example
cutting tools /'kʌtɪŋ tu:lz/	Diamond is used in **cutting tools** because it is very hard.
graphite /'græfaɪt/	Pencils contain **graphite**.
layers /'leɪəz/	The TCP/IP model has four **layers**. TCP/IP
lubricant /'lu:brɪkənt/	Graphite is a good **lubricant** because its layers slide.
delocalised electrons /dɪ'lɒkəlaɪzd ɪ'lektrɒnz/	**Delocalised electrons** let metals conduct electricity.
electrode /ɪ'lektrəʊd/	The positive **electrode** is the anode.
silicon(IV) oxide /'sɪlɪkən 'ɒksaɪd/	Sand is mostly **silicon(IV) oxide**.
metallic bonding /mə'tælɪk 'bɒndɪŋ/	**Metallic bonding** holds the atoms in a metal together.
malleability /ˌmælə'bɪlɪti/	The **malleability** of metals lets them be hammered into shape.
ductility /dʌk'tɪlɪti/	**Ductility** lets copper be pulled into wire.