Group 2

A-Level Chemistry · Vocabulary in context

Word	Example
thermal stability /ˈθɜːml stəˈbɪlɪti/	Barium carbonate has a higher **thermal stability** than magnesium carbonate.
Group 2	Magnesium and calcium are **Group 2** metals.
nitrate /ˈnaɪtreɪt/	Potassium **nitrate** is used in fertilisers.
carbonate /ˈkɑːbəneɪt/	Calcium **carbonate** fizzes with acid.
cation /ˈkætaɪən/	Sodium loses one electron to form a **cation**.
ionic radius /aɪˈɒnɪk ˈreɪdɪəs/	The Na+ ion has a smaller **ionic radius** than the sodium atom. Na+
charge density /tʃɑːdʒ ˈdensɪti/	A small 2+ ion has a high **charge density**. 2+
distorts	A small cation **distorts** the electron cloud of the carbonate ion.
polarisation /ˌpəʊləraɪˈzeɪʃn/	The small Li+ ion causes strong **polarisation** of a large anion. Li+
anion /ˈænaɪən/	Chlorine gains one electron to form an **anion**.
decompose /ˌdiːkəmˈpəʊz/	Group 2 carbonates **decompose** on heating to give an oxide and CO_2. CO_2
polarises /ˈpəʊləraɪzɪz/	The small Al3+ ion **polarises** the water molecules around it. Al3+
thermally stable	Barium carbonate is more **thermally stable** than magnesium carbonate.

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ionic solid /aɪˈɒnɪk ˈsɒlɪd/	An **ionic solid** is held together by its lattice energy.
dissolves	A solid **dissolves** easily when hydration releases enough energy.
enthalpy change of solution /enˈθælpi tʃeɪndʒ ɒv səˈluːʃn/	Ammonium nitrate has a positive **enthalpy change of solution**: the water gets cold.
lattice /ˈlætɪs/	The ions in salt sit in a regular **lattice**.
lattice energy /ˈlætɪs ˈenədʒi/	Magnesium oxide has a large **lattice energy**.
ions /ˈaɪɒnz/	Water molecules surround the **ions** as they dissolve.
enthalpy change of hydration /enˈθælpi tʃeɪndʒ ɒv haɪˈdreɪʃn/	Small ions have a large **enthalpy change of hydration**.
hydration enthalpy /haɪˈdreɪʃn enˈθælpi/	The **hydration enthalpy** is less negative for larger ions.
trends /trendz/	Hydroxides and sulfates show opposite solubility **trends**.
solubility /ˌsɒljuːˈbɪlɪti/	Sugar has a high **solubility** in water.
hydroxide /haɪˈdrɒksaɪd/	Sodium **hydroxide** is a strong alkali.
outweighs	For hydroxides, the fall in lattice energy **outweighs** the fall in hydration enthalpy.
sulfate /ˈsʌlfeɪt/	Copper **sulfate** is a blue salt.

Word	Example
dominates	For sulfates, the fall in hydration enthalpy **dominates**.
favourable /ˈfeɪvərəbl/	Dissolving is less **favourable** when hydration releases less energy.
decomposition products	The **decomposition products** of a nitrate include brown NO_2. NO_2
oxide /ˈɒksaɪd/	Magnesium **oxide** forms when magnesium burns.
soluble /ˈsɒljuːbl/	Barium hydroxide is more **soluble** than magnesium hydroxide.
polarising power /ˈpəʊləraɪzɪŋ ˈpaʊə/	**Polarising power** rises with charge and falls with ionic radius.

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