AQA A Level Chemistry — 3.2 Inorganic Chemistry

3.2.1 Periodicity

3.2.1.1 *Classification of elements as s, p, d or f block by position in the Periodic Table.*

Elements classified by the sub-shell into which the last electron is added:

s-block: Groups 1 and 2 (+ H, He).

p-block: Groups 13–18.

d-block: transition metals (Groups 3–12).

f-block: lanthanides and actinides.

3.2.1.2 *Trends in atomic radius, first ionisation energy and melting point of Period 3 elements (Na–Ar).*

Atomic radius decreases across Period 3: more protons, same shielding → greater effective nuclear charge pulls electrons closer.

First IE generally increases: more protons, same shielding. Drops at Al (3p vs 3s) and S (paired 3p repulsion).

Melting points: Na < Mg < Al (metallic bonding strengthens). Si very high (giant covalent). P■, S■, Cl■, Ar are simple molecular — low m.p. determined by London forces.