

GCSE Bonding and structure summary

The easiest way to use the information needed for this part of the GCSE syllabus is to view it as further detail on the solid – liquid – gas particle diagrams which are studied in year 7 or 8 in Chemistry. For each of the four types of substances, the table below sets out the types of particles in the substance, and the structure. Spend some time memorising these, and your answers should score high marks. Good luck!

Type of substance	Particles it is made of	Structure of the substance
Ionic	Positive and negative IONS	A GIANT LATTICE of (charged) ions, held together by STRONG electrostatic forces of attraction
Simple covalent	ATOMS joined in small groups by COVALENT bonds to make molecules	Separate small (neutral) molecules that are WEAKLY attracted to each other by INTERMOLECULAR forces
Metallic	Metal IONS surrounded by electrons	A GIANT LATTICE of metal IONS surrounded by a 'SEA' of DELOCALISED electrons. STRONG electrostatic attraction holds it together.
Giant covalent	ATOMS joined together in a VERY large group (millions or billions)	A GIANT LATTICE of atoms connected to other atoms by strong COVALENT bonds