

IGCSE Chemistry (9-1) Specification 1(f)

(f) Ionic bonding

Students should:

1.37 understand how ions are formed by electron loss or gain

1.38 know the charges of these ions:

- metals in Groups 1, 2 and 3
- non-metals in Groups 5, 6 and 7
- Ag^+ , Cu^{2+} , Fe^{2+} , Fe^{3+} , Pb^{2+} , Zn^{2+}
- hydrogen (H^+), hydroxide (OH^-), ammonium (NH_4^+), carbonate (CO_3^{2-}), nitrate (NO_3^-), sulfate (SO_4^{2-})

1.39 write formulae for compounds formed between the ions listed above

1.40 draw dot-and-cross diagrams to show the formation of ionic compounds by electron transfer, limited to combinations of elements from Groups 1, 2, 3 and 5, 6, 7 only outer electrons need be shown

1.41 understand ionic bonding in terms of electrostatic attractions

1.42 understand why compounds with giant ionic lattices have high melting and boiling points

1.43 know that ionic compounds do not conduct electricity when solid, but do conduct electricity when molten and in aqueous solution