

Revision Exercise – Chemical Formula (Group Ions)

Group ions contain two or more atoms and usually have a negative charge (although the ammonium ion (NH_4^+) has a positive charge).

The formulae of these ions can be found in the data booklet.

When the SVSDF system is used, the valency of the ion needs to be known. In the data book, the number of charges on the ion is given, this can be used as the valency of the ion.

e.g. Lithium carbonate

Symbol Li (CO_3)

at the start put the group ion in brackets—
don't write the charge!

Valency 1 2

Lithium (Gp 1), CO_3^{2-}

Swap 2 1

Divide (can't divide in this case)

Can only divide if whole numbers result

Formula $\text{Li}_2(\text{CO}_3)_1$

Don't write 1s!

No number multiplying the ion, so no brackets needed.

Final Formula: Li_2CO_3

A detailed plan, showing how to arrive at the correct answer is available for each of the questions below. Simply click the question to view this detailed explanation.



Answer
Guide.

Write the chemical formula for each of the following compounds.

- | | | |
|--------------------------------|------------------------|---------------------------|
| a) ammonium carbonate | b) aluminium sulfate | c) calcium sulfate |
| d) magnesium hydroxide | e) ammonium nitrate | f) calcium nitrate |
| g) beryllium sulfate | h) lead(II) nitrate | i) tin(IV) sulfate |
| j) iron (II) hydroxide | k) copper(II) nitrate | l) ammonium nitrate |
| m) ammonium carbonate | n) zinc (II) hydroxide | o) copper(II) sulfate |
| p) potassium sulfate | q) silver (I) nitrate | r) sodium sulfate |
| s) barium dichromate | t) tin (II) chromate | u) potassium permanganate |
| v) iron (III) thiosulfate | w) barium hydroxide | x) copper (II) hydroxide |
| y) copper (II) hydrogensulfate | z) ammonium ethanoate | |