

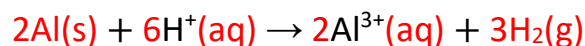
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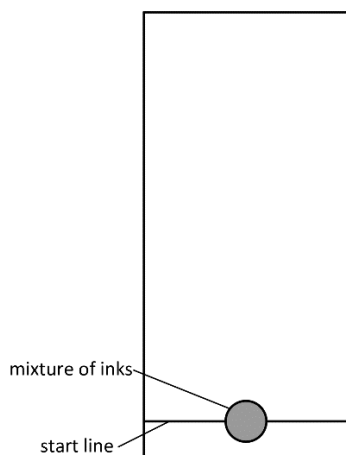


Aluminium reacts with dilute hydrochloric acid to form a solution containing aluminium ions, Al^{3+} .

Complete the **balanced ionic equation** for this reaction. **Include all state symbols.**



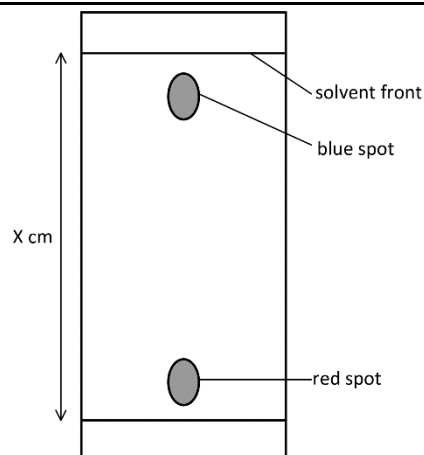
The image below shows a chromatogram.



Give a reason why the start line is drawn in pencil rather than in ink.

Accept **one** of the following:

- Pencil is insoluble in the solvent.
- Ink is soluble and would run in the solvent.



The blue spot had moved 14.5 cm and the solvent front had moved 15.3 cm.

Calculate the R_f value of the substance in the blue spot, giving your answer to 2 significant figures.

$$14.5 \div 15.3 = 0.95$$

$$R_f \text{ value} = 0.95$$

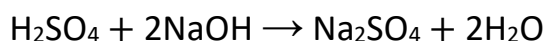
Give the electronic configuration of a sulfur ion.



Give the formula for a carbonate ion.



In the titration, 25.00 cm^3 of dilute sulfuric acid reacted with 24.25 cm^3 of $0.200 \text{ mol dm}^{-3}$ sodium hydroxide solution, NaOH .



Calculate the concentration of the dilute sulfuric acid, H_2SO_4 , in mol dm^{-3} .

$$\text{Moles} = \text{concentration} \times \text{volume}$$

$$\text{Moles} = 0.200 \times \frac{97}{4000}$$

$$\text{Moles} = \frac{97}{20000}$$

$$\text{Concentration} = \text{moles} \div \text{volume}$$

$$\text{Concentration} = \frac{97}{40000} \div 0.025$$

$$\text{Concentration} = 0.097 \text{ mol/dm}^3$$

In which states will ionic compounds conduct electricity?

Aqueous and molten

The structure of ionic compounds is known as a?

Giant ionic lattice or giant lattice or a lattice.