



1 The electrolysis of molten aluminium fluoride produces aluminium (Al) at the negative electrode and fluorine (F<sub>2</sub>) at the positive electrode.

a Explain why solid aluminium fluoride does not conduct electricity but molten aluminium fluoride does.

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b Give the formula of the ions in aluminium fluoride: aluminium ions ..... fluoride ions .....

c Give the formula of aluminium fluoride: .....

d Explain why aluminium ions go to the negative electrode. ....

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e Write a half equation for the formation of aluminium at the negative electrode. ....

f Explain whether the formation of aluminium is an oxidation or reduction process. ....

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g Explain whether the negative electrode is the anode or cathode. ....

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h Write a half equation for the formation of fluorine at the positive electrode. ....

2 Complete the table about the electrolysis of some molten ionic compounds.

molten substance	formula	negative electrode half-equation	positive electrode half-equation
calcium oxide			
magnesium bromide			
sodium chloride			