

Exercise 8.52 – Electrolytic cells

Q852-01 When molten magnesium chloride is electrolysed how many moles of gaseous chlorine will be produced for every mole of magnesium?

- A. $\frac{1}{2}$
 - B. 1
 - C. 2
 - D. 4
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Q852-02 Which of the following choices correctly completes the sentence? In the electrolysis of molten sodium chloride the sodium ion goes to the..

- A. Positive electrode where it undergoes oxidation
 - B. Negative electrode where it undergoes reduction
 - C. Positive electrode where it undergoes reduction
 - D. Negative electrode where it undergoes oxidation
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Q852-03 During the electrolysis of a molten salt which statement is NOT correct?

- A. The ions only move when a current flows
 - B. Positive ions are attracted to the negative electrode
 - C. Positive ions gain electrons at the negative electrode
 - D. Negative ions lose electrons at the positive electrode
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Q852-04 During the electrolysis of a molten salt the cation moves towards the ... I ... and undergoes ... II...

	I	II
A.	negative electrode	reduction
B.	negative electrode	oxidation
C.	positive electrode	oxidation
D.	positive electrode	reduction

Q852-05 Which species are produced at the positive and negative electrodes during the electrolysis of molten sodium chloride?

	Positive electrode	Negative electrode
A.	$\text{Na}^+(\text{l})$	$\text{Cl}_2(\text{g})$
B.	$\text{Cl}^-(\text{l})$	$\text{Na}^+(\text{l})$
C.	$\text{Na}(\text{l})$	$\text{Cl}_2(\text{g})$
D.	$\text{Cl}_2(\text{g})$	$\text{Na}(\text{l})$

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Q852-06 What happens when molten potassium bromide is electrolysed in an electrolytic cell?

- A. Bromine is produced at the positive electrode
 - B. Potassium ions lose electrons at the negative electrode
 - C. Electrons flow through the liquid from the negative electrode to the positive electrode
 - D. Oxidation occurs at the negative electrode and reduction takes place at the positive electrode
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Q852-07 The same quantity of electricity was passed through separate molten samples of aluminium oxide and sodium chloride. How many moles of sodium will be produced if 0.2 moles of oxygen gas were formed?

- A. 0.1
 - B. 0.2
 - C. 0.4
 - D. 0.8
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Q852-08 Which statement is correct for the electrolysis of a molten salt?

- A. Positive ions move towards the positive electrode
 - B. A gas is produced at the negative electrode
 - C. Only electrons move in the electrolyte
 - D. Both positive and negative ions move towards electrodes
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Q852-09 What product is formed at the cathode (negative electrode) when molten CaI_2 is electrolysed?

- A. Ca^{2+}
 - B. I^-
 - C. Ca
 - D. I_2
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Q852-10 Which processes occur during the electrolysis of molten sodium chloride?

- I Sodium and chloride ions move through the electrolyte
 - II Electrons move through the external circuit
 - III Oxidation takes place at the positive electrode
- A. I and II only
 - B. I and III only
 - C. II and III only
 - D. I, II and III
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