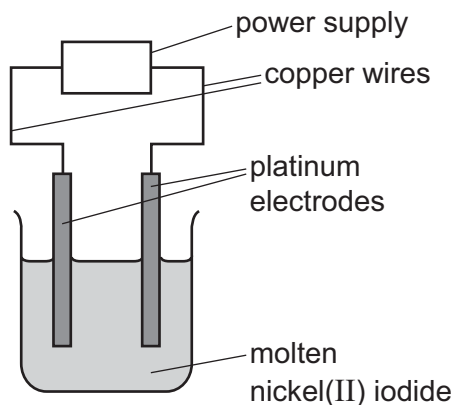


ELECTROLYSIS OF MOLTEN COMPOUNDS

1 Molten nickel(II) iodide can be electrolysed using the apparatus shown.



During electrolysis, charge is transferred through the copper wires and through the molten nickel(II) iodide.

(i) Name the type of particles which transfer charge through the copper wires.

..... [1]

(ii) Name the type of particles which transfer charge through the molten nickel(II) iodide.

..... [1]

(iii) Predict the products of the electrolysis of molten nickel(II) iodide. Write an ionic half-equation for the formation of **one** of these products.

products

ionic half-equation

[3]

MARKING SCHEME:

(i)	electrons	1
(ii)	(positive and negative) ions	1
(iii)	nickel	1
	iodine	1
	$\text{Ni}^{2+} + 2\text{e}^{-} \rightarrow \text{Ni}$ OR $2\text{I}^{-} \rightarrow \text{I}_2 + 2\text{e}^{-}$	1

2 Molten sodium chloride is electrolysed using carbon electrodes.

(i) Name the product formed at the negative electrode.

..... [1]

(ii) Write an ionic half-equation for the reaction occurring at the negative electrode.

..... [1]

(iii) Chlorine is produced at the positive electrode.

Give the test for chlorine.

test

result [2]

MARKING SCHEME:

(i)	sodium	1
(ii)	$\text{Na}^+ + \text{e}^- \rightarrow \text{Na}$	1
(iii)	test: (damp blue) litmus	1
	result: bleached / removes colour / (turns) white	1