

Extraction of Aluminium

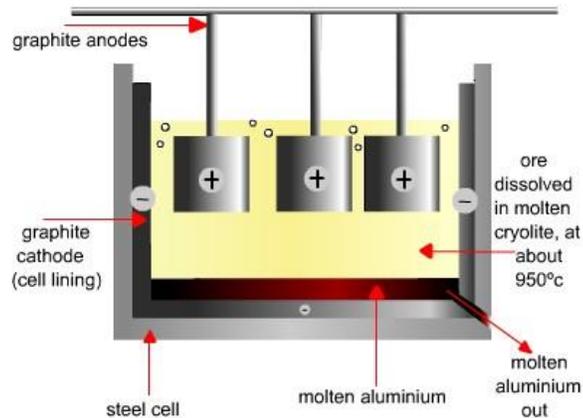
Ore: Bauxite Al_2O_3 /aluminium oxide/alumina

Solid aluminium oxide do not conduct electricity as there is no mobile ions.

Aluminium is high in the reactivity series, but in reality, it does not react with water and the reaction with dilute acids can be quite slow

*This is because it reacts readily with oxygen, forming a protective layer of **aluminium oxide**.*

This layer prevents reaction with water and dilute acids, so aluminium can behave as if it is unreactive .



Cryolite Na_3AlF_6 :

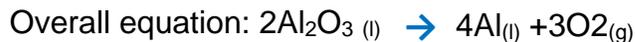
1. Reduce the melting point of aluminium oxide therefore saving alot of energy.
- 2.Improves the electrical conductivity.

Cathode



Molten aluminium is tapped off from the bottom.

Anode



Oxygen reacts with carbon anode to form carbondioxide so anodes need to replace again as again as decrease in size.

Beside O_2 , CO_2 gases F_2 and CO also forms.

Uses of aluminium :

- 1- **Food containers**, because does not react with food as form a protective layer of aluminium oxide.
- 2- **Aircraft**, because it has low density.
- 3- **Electric power lines** because it is a good conductor of electricity.