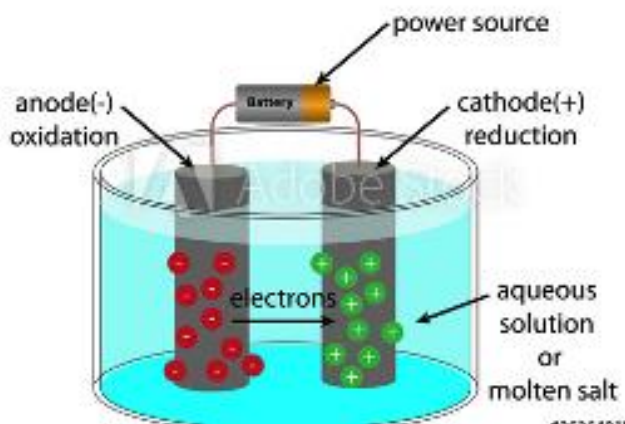
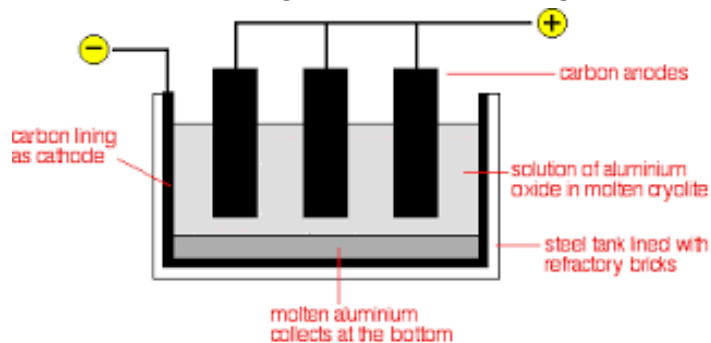


## Chemistry C6 Electrolysis

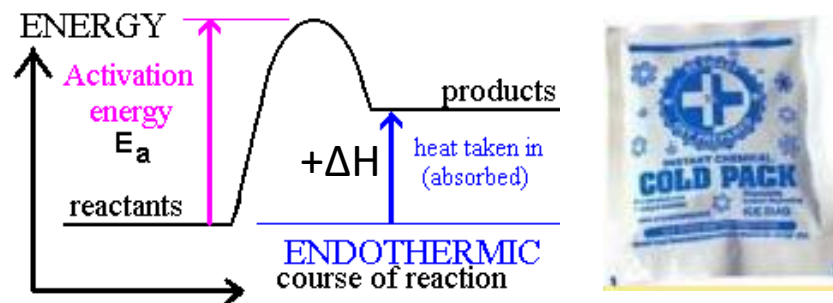
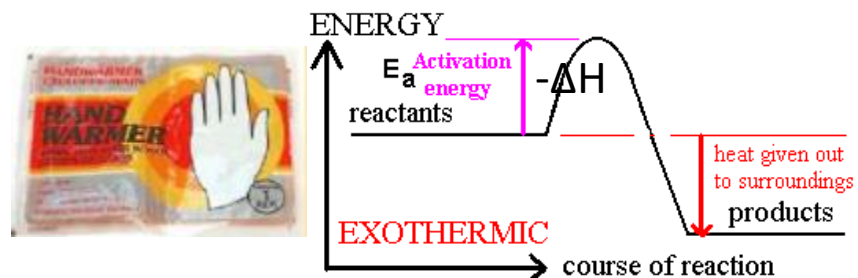


Electrolysis breaks down a substance using electricity. Ionic compounds can only be electrolysed when they are molten or dissolved in water. This is because the ions are free to move and carry their charge to the electrodes.

Aluminium extraction - Aluminium oxide is mixed with molten cryolite to lower the melting point reducing the energy needed to extract aluminium. The carbon anodes wear away as the oxygen reacts with the hot carbon anodes forming carbon dioxide gas.



## Chemistry C7 Energy Changes in Reactions



Energy is conserved in chemical reactions. The amount of energy in the universe at the end of a chemical reaction is the same as before the reaction takes place.

An exothermic reaction is one that transfers energy to the surroundings so the temperature of the surroundings increases. Exothermic reactions include combustion, many oxidation reactions and neutralisation. Everyday uses of exothermic reactions include self-heating cans and hand warmers.

An endothermic reaction is one that takes in energy from the surroundings so the temperature of the surroundings decreases. Endothermic reactions include thermal decompositions. Some sports injury packs are based on endothermic reactions.

**Vocabulary:**

**Electrolysis:** The breakdown of a substance containing ions by electricity.

**Electrolyte:** A liquid containing free moving ions which is conducting.

**Anode:** The positively charged electrode.

**Cathode:** The negatively charged electrode.

**Ion:** A charged particle.

**Half equation:** An equation that contains electrons and describes reduction (gain of electrons) and oxidation (loss of electrons).

**Oxidation:** Loss of electrons

**Reduction:** Gain of Electrons

**Exothermic:** A reaction that transfers energy to the surroundings.

**Endothermic:** A reaction that takes in energy from the surroundings.

**Activation energy:** The minimum energy needed for a reaction to take place.

**Bond energy:** The energy required to break a specific chemical bond.

**Reaction Profile:** The relative difference in the energy of the reactants and products

Videos



Quizzes

