Energy changes

Answers

GCSE science knowledge recall

This topic online

Q	Answer	Remember
1	exothermic	EXothermic - energy EXits.
2	endothermic	ENdothermic - energy goes IN.
3	increases	The reaction mixture feels warm because energy is passing out to you.
4	combustion	Burning fuels, neutralising acids and many oxidation reactions all give out energy.
5	thermal decomposition	Citric acid with sodium hydrogencarbonate is another endothermic example.
6	hand warmer	Hand warmers use oxidation or crystallisation to release energy.
7	cold pack	Squeezing the pack mixes the chemicals and it goes cold, which helps reduce swelling.
8	conservation of energy	The total energy in the universe stays the same before and after.
9	polystyrene cup	Polystyrene is a good insulator. A lid cuts losses even more.
10	thermometer	Record the starting temperature and the highest (or lowest) temperature reached.
11	activation energy	On a reaction profile it is the hump from the reactants up to the peak.
12	energy	The horizontal axis shows the progress of the reaction.
13	lower	The difference in height is the energy given out to the surroundings.
14	The products have more energy than the reactants, so the extra energy is taken in from the surroundings.	On the profile the products line sits above the reactants line.
15	endothermic	You must put energy in to pull atoms apart.
16	exothermic	Energy is released as new bonds form.
17	exothermic	The leftover energy is passed to the surroundings.
18	kJ/mol	It is the energy for one mole of that bond.
19	2	The 2 in front of HCl means two molecules, each with one H-Cl bond.
20	-200 kJ/mol	Energy in minus energy out: 500 - 700 = -200, so it is exothermic.
21	negative	The chemicals lose energy to the surroundings, so the change is negative.

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Q	Answer	Remember
22	positive	The chemicals gain energy from the surroundings.
23	electrolyte	The electrolyte lets ions move between the two metals.
24	reactivity series	A big difference in reactivity gives a big voltage.
25	cells	Joining cells in series adds their voltages together.
26	reactants	Once a reactant runs out, the chemical reaction stops.
27	external electrical current	Charging pushes the reaction backwards, remaking the reactants.
28	oxygen	Fuel cells are supplied continuously with a fuel and oxygen from the air.
29	water	No carbon dioxide is made at the cell itself.
30	They do not need recharging (only refuelling), they make only water, and they do not end up as toxic waste to dispose of.	But hydrogen is a gas that is hard to store, and making it often uses fossil fuels.

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