

CAIE IGCSE Chemistry

6.1 Physical and chemical changes

Notes

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Identify physical and chemical changes, and understand the differences between them

Physical changes

- Can separate mixtures – since they consist of elements/compounds that are not chemically combined
- Physical changes are when changes of state occur, e.g. melting, freezing etc
- Because they do not involve chemical reactions, no new substances are made
- E.g. fractional distillation of crude oil

Chemical changes

- Requires a chemical reaction and the products must have a different chemical composition to the reactants.
- Atoms aren't made or destroyed during chemical reactions so the mass is conserved - the total mass of the reactants is equal to the mass of the products
- E.g. neutralisation reactions to produce salts

Differences between physical and chemical changes

Physical changes	Chemical changes
Reversible	Irreversible
No significant energy change	Large energy change- Thermal energy is either taken in (endothermic) or released (exothermic)
Usually no colour change	Colour change can occur
Examples: Freezing, melting, boiling	Examples: Cooking, digestion, burning

