# Chemical reactions

IGCSE Chemistry · Vocabulary in context

| Word | Example |
|---|---|
| **physical change** /ˈfɪzɪkl ʧeɪnʤ/ | Melting ice is a **physical change**: no new substance forms. |
| **chemical change** /ˈkemɪkl ʧeɪnʤ/ | Burning wood is a **chemical change**: new substances form. |
| **precipitate** /prɪˈsɪpɪteɪt/ | A white **precipitate** forms when silver nitrate meets chloride ions. |
| **rate of reaction** /reɪt ɒv rɪˈækʃn/ | The **rate of reaction** is faster at higher temperature. |
| **reactants** /rɪˈæktənts/ | Hydrogen and oxygen are the **reactants** that make water. |
| **products** /ˈprɒdʌkts/ | Burning carbon gives one of the **products**: carbon dioxide. |
| **collision theory** /kəˈlɪʒn ˈθɪəri/ | **Collision theory** explains reactions through successful particle collisions. |
| **particles** /ˈpɑːtɪklz/ | The **particles** in a gas move all the time. |
| **collide** /kəˈlaɪd/ | Particles must **collide** to react. |
| **activation energy** /ˌæktɪˈveɪʃn ˈenəʤi/ | A match gives the **activation energy** to start the fire. |
| **concentration** /ˌkɒnsənˈtreɪʃn/ | The **concentration** of the acid is 2 mol/dm$^3$. 2 mol/dm$^3$ |
| **pressure** /ˈpreʃə/ | A sharp knife puts a large **pressure** on the bread. |



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| **surface area** /ˈsɜːfɪs ˈeərɪə/ | Smaller solid pieces provide more **surface area** for reaction. |
| **kinetic energy** /kɪˈnetɪk ˈenədʒi/ | A fast car has a lot of **kinetic energy**. |
| **catalyst** /ˈkætəlɪst/ | A **catalyst** speeds up a reaction without being used up. |
| **enzymes** /ˈenzaɪmz/ | **Enzymes** speed up reactions in the body. |
| **syringe** /sɪˈrɪndʒ/ | We collect the gas in a **syringe** to measure its volume. |
| **reversible reaction** /rɪˈvɜːsɪbl rɪˈækʃn/ | A **reversible reaction** can go both ways. |
| **hydrated** /haɪˈdreɪtɪd/ | Blue copper sulfate is **hydrated**: it contains water. |
| **anhydrous** /ænˈhaɪdrəs/ | White **anhydrous** copper sulfate turns blue when water is added. |
| **closed system** /kləʊzd ˈsɪstəm/ | In a **closed system**, nothing can get in or out. |
| **equilibrium** /ˌiːkwɪˈlɪbrɪəm/ | The book is in **equilibrium** because the forces balance. |
| **forward reaction** /ˈfɔːwəd rɪˈækʃn/ | In the **forward reaction**, nitrogen and hydrogen make ammonia. |
| **reverse reaction** /rɪˈvɜːs rɪˈækʃn/ | In the **reverse reaction**, ammonia breaks down again. |
| **position of equilibrium** /pəˈzɪʃn ɒv ˌiːkwɪˈlɪbrɪəm/ | Changing pressure can shift the **position of equilibrium**. |
| **endothermic** /ˌendəʊˈθɜːmɪk/ | The reaction is **endothermic**: it takes in heat. |



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| **exothermic** /egzəˈθɜːmɪk/ | The reaction is **exothermic**: it gives out heat. |
| **Haber process** /ˈheɪbə ˈprəʊses/ | The **Haber process** makes ammonia. |
| **hydrogen** /ˈhaɪdrədʒn/ | **Hydrogen** gas burns with a squeaky pop. |
| **methane** /ˈmiːθeɪn/ | Cows give off **methane**. |
| **nitrogen** /ˈnaɪtrədʒn/ | Air is mostly **nitrogen**. |
| **iron** /ˈaɪən/ | **Iron** rusts when it meets water and oxygen. |
| **Contact process** /ˈkɒntækt ˈprəʊses/ | The **Contact process** makes sulfuric acid. |
| **sulfur** /ˈsʌlfɜː/ | **Sulfur** burns with a blue flame. |
| **oxygen** /ˈɒksɪdʒn/ | Things burn faster in pure **oxygen**. |
| **vanadium(V) oxide** /væˈneɪdɪəm ˈɒksaɪd/ | **Vanadium(V) oxide** is the catalyst for making sulfuric acid. |
| **compromise** /ˈkɒmprəmaɪz/ | A **compromise** temperature balances reaction speed and product yield. |
| **oxidation** /ˌɒksɪˈdeɪʃn/ | **Oxidation** is the loss of electrons. |
| **reduction** /rɪˈdʌkʃn/ | **Reduction** is the gain of electrons. |
| **redox reaction** /rɪˈdɒks rɪˈækʃn/ | In a **redox reaction**, one substance loses electrons and another gains them. |
| **electrons** /ɪˈlektrɒnz/ | **Electrons** move around the nucleus. |



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| Word | Example |
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| # **oxidation number** /ˌɒksɪˈdeɪʃn ˈnʌmbə/ | In H2O, oxygen has an **oxidation number** of −2. H2O −2 |
| ↑ **oxidising agent** /ˈɒksɪdaɪzɪŋ ˈeɪdʒənt/ | Oxygen is an **oxidising agent**. |
| ↓ **reducing agent** /rɪˈdjuːsɪŋ ˈeɪdʒənt/ | Carbon is a **reducing agent** in a blast furnace. |
| **potassium manganate(VII)** /pəˈtæsɪəm ˈmæŋgəneɪt/ | Purple **potassium manganate(VII)** loses its colour when it reacts. |
| **potassium iodide** /pəˈtæsɪəm ˈaɪədaɪd/ | **Potassium iodide** turns brown when it reacts with chlorine. |
| **iodine** /ˈaɪədiːn/ | **Iodine** is a dark grey solid in Group 7. 7 |



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