How fast? The rate of chemical change

International Baccalaureate · IB Diploma · Chemistry · HL · Vocabulary in context

Word	Example
rate of reaction /reɪt ɒv rɪˈækʃn/	The **rate of reaction** is faster at higher temperature.
tangent /ˈtændʒənt/	Draw a **tangent** to the curve to find the gradient at one point.
initial rate /ɪˈnɪʃl reɪt/	The **initial rate** is measured at the start of a reaction.
collision theory /kəˈlɪʒn ˈθɪəri/	**Collision theory** explains reactions through successful particle collisions.
activation energy /ˌæktɪˈveɪʃn ˈenədʒi/	A match gives the **activation energy** to start the fire.
Maxwell–Boltzmann distribution	A **Maxwell–Boltzmann distribution** shows how particle energies are spread.
surface area /ˈsɜːfɪs ˈeərɪə/	Smaller solid pieces provide more **surface area** for reaction.
catalyst /ˈkætəlɪst/	A **catalyst** speeds up a reaction without being used up.
alternative reaction pathway	A catalyst provides an **alternative reaction pathway** with lower activation energy.
elementary step /ˌelɪˈmentəri step/	An **elementary step** is one event within a reaction mechanism.
reaction mechanism /rɪˈækʃn ˈmekənɪzəm/	The **reaction mechanism** shows each step of the reaction.

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molecularity	**Molecularity** counts the particles in one step.
intermediate /ˌɪntəˈmiːdɪət/	An **intermediate** forms in one step and is used up in the next.
rate-determining step /reɪt dɪˈtɜːmɪnɪŋ step/	The slowest step is the **rate-determining step**.
rate equation /reɪt ɪˈkweɪʒn/	The **rate equation** is rate = k[A][B]. $\text{rate} = k[A][B]$
order /ˈɔːdə/	Reaction **order** is the concentration exponent in the rate equation.
rate constant /reɪt ˈkɒnstənt/	The **rate constant** k gets larger at higher temperature. k
half-life /hɑːf laɪf/	After one **half-life**, half the nuclei have decayed.
frequency factor	The **frequency factor** A appears in the Arrhenius equation. A