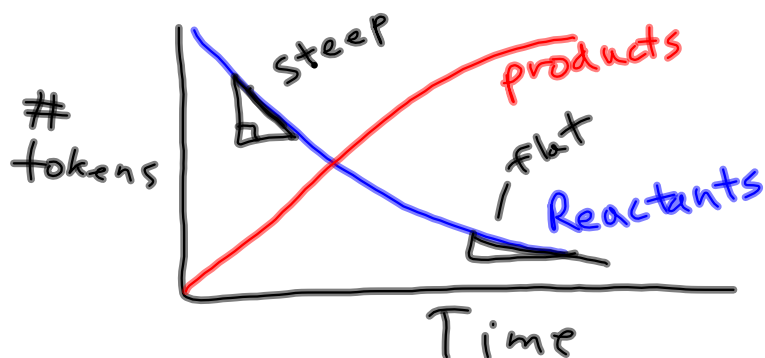


Factors Affecting Rate

1. Temperature - Higher Temp. - faster
e.g. food in fridge.
 2. Concentration of reactants.
higher [] \Rightarrow faster reaction
 3. Surface area of reactants
more surface area \Rightarrow faster reaction
e.g. wood fire-kindling \rightarrow logs
 4. Nature of reaction -
e.g. fast - explosion
slow - plants (photosynthesis)
 5. Catalyst - substance which speeds up a reaction
e.g. catalytic converter (car)
e.g. enzymes - living things
- do not get used up. \nearrow

Reaction Rate Analogy

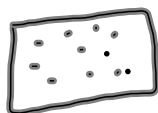


- Particles need to collide to react.
- Analogy - 50/50 probability of successful collision.
- In reality - # successful collisions is low.

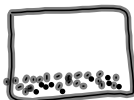
Kinetic Molecular Theory Explains Factors Affecting Rate

(Collision theory) read text p469

* All particles are in random motion



gas



liquid

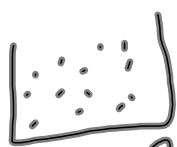


solid

- particles must collide to react.
- speed of particles — temperature

Factors Explained -

1. Concentration of reactants — higher [] is faster.



low []

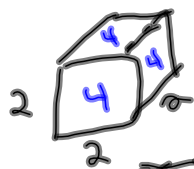


high []

← is greater chance of collision.

2. Surface Area higher S.A. ⇒ faster rxn

↓
- heterogeneous rxns. ← two or more states



8 cubes

$$S.A. = 6 \times 4 = 24$$



$$+ 6 = 48$$

↑ greater chance of collisions

Test 1-Atomic Structure

Outline

1. Models of the atom (history)
2. Bohr, quantum mechanical model
↓
Orbits
↓
Orbitals ← define
3. Spectral lines are evidence.
4. Write & explain e^- configuration
5. Diagonal rule - periodic table arrangement
6. Valence e^- - e^- dot diagrams
7. Trends & patterns in periodic table
(at. radius / ionization energy)
↓ ↙
predict & explain