Degradation mechanisms

- Oxidation
- Hydrolysis
- racemization
- decarboxylation
- enolization

- epimerization
- Dehydration
- dimerization
- Cyclisation (ring closure)
- Photolysis reactions

By reaction kinetics;

- ✓ The steps in a reaction,
- ✓ The concentrations of reactants (reactants) and reaction products formed on the rate and speed of these stages,
- ✓ The effect of other factors (heat, light, pH, humidity, etc.) on the reaction is explained.

Reaction rate

In a chemical reaction, the extent of the progress of the reaction over time is the rate of that reaction.

$$\text{Hız= V=} \pm \frac{dc}{dt}$$

A, B; reactant

C,D; products formed in the reaction

a,b,c,d; number of molecules entering and leaving the reaction

$$V = -\frac{1}{a}\frac{d[A]}{dt} = -\frac{1}{b}\frac{d[B]}{dt} = +\frac{d[C]}{dt} = +\frac{d[D]}{dt}$$

or

$$V = k[A]^a[B]^b$$

k = reaction rate constant

Reaction grade

Equal to the sum of the exponents. The reaction grade shows the number of colliding molecules.

n= a+b

A+2B ⟹ products

or

$$V = k[A]\,[B][B] \qquad V = k[A]^1[B]^2$$

n ›3 can not n=1+2=3

Effect of temperature

To start a reaction, the lowest energy that components must have is the "activation energy".

üssel

$$m = -\frac{E_a}{R}$$ or $$\ln k = \ln A - \frac{E_a}{R} \cdot \frac{1}{T}$$

$$\log k = \log A - \frac{E_a}{2,303R} \cdot \frac{1}{T}$$

E_a ⟹ activation energy cal/mol

T ⟹ absolute temperature

R ⟹ 1.987 cal/ der.mol