

* 2nd Order Reaction

$$\text{Rate} = k [A]_t^2$$

$$-\frac{dA}{dt} = k [A]_t^2$$

final eqⁿ

$$\frac{1}{[A]_t} = \frac{1}{[A]_0} + kt \quad A_0 = \text{initial Conc}^n$$

Half life

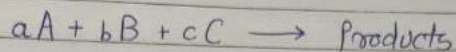
$$A_t = \frac{A_0}{2}$$

$$t_{1/2} = \frac{1}{k[A]_0} \quad (\text{depends on } [A]_0)$$

* Rxⁿ involving several reactants

* Ostwald's isolation Method

(when all reactants except one taken in excess amount so that change in their concentration is negligible.)



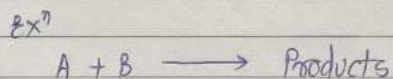
$$\text{rate} = k [A]^x [B]^y [C]^z$$

if B & C are in large amount, so change in concⁿ remain const.

$$r = k' [A]^x$$

* Pseudo first order reaction

(x^n which are not 1st order, but under certain condⁿ x^n becomes 1st order are called pseudo 1st order x^n .)



$$r = k [A]^x [B]^y$$

$$\text{order} = 2$$

if A or B is in large amount

$$\text{(B in excess)} \quad r = k' [A]$$

$$\text{or} \quad r = k' [B]$$

$$\text{order} = 1$$

$$\text{order} = 1$$

2nd order x^n becomes 1st order by one of the reactants taking in excess.