

EXAMPLES OF REACTIONS ZERO, FIRST OR SECOND ORDER IN ONE REACTANT

Zero Order

Enzyme catalyzed reactions

$$[S] \gg [E]$$



$$-\frac{dS}{dt} = k$$

First Order

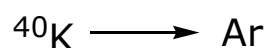


$$t_{1/2} \text{ (years)}$$

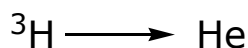
Radioactive decay



4.5×10^9 rocks

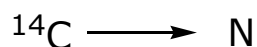


1.3×10^9 human fossils



12.3 wine

Carbon dating



5730 organic remains

Pseudo

$$[B] \gg [A]$$



$$-\frac{dA}{dt} = k[A]^1$$

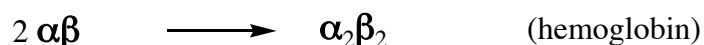
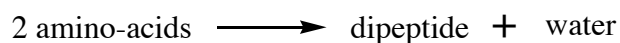
(bleaching lab)

Second Order

Dimerization



$$-\frac{1}{2} \frac{dA}{dt} = k[A]^2$$



Pseudo

$$[A] = [B]$$

