

|| GENERAL CHEMISTRY ||

[[class notes]] 2/6

Chemical Equilibrium, part 1 (chapter 15)

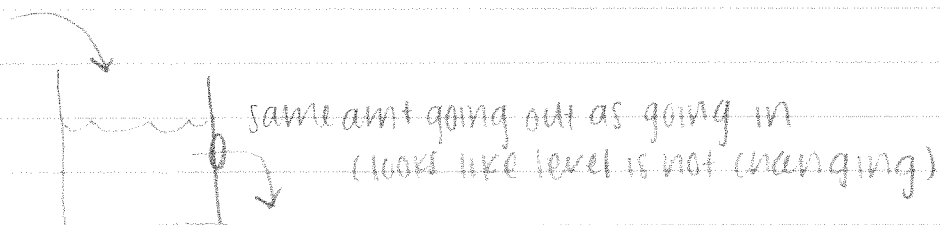
The concept of Equilibrium

reaction: $A \rightarrow B$ "goes to completion"

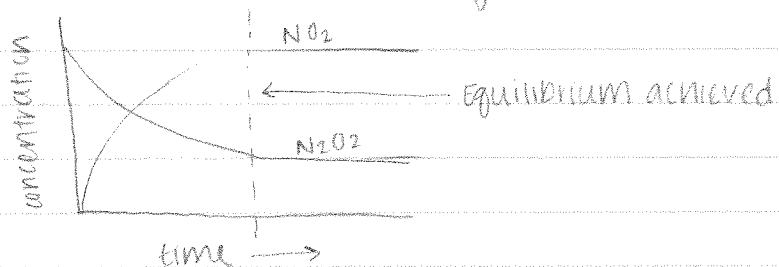
$A \rightleftharpoons B$ goes back and forth

$A \rightleftharpoons B$ tends towards B

A: contains mixture of reactants & products, concentrations of which stays constant over time



- when the amount of reactant & product no longer change over time, the reaction is said to be at equilibrium



- at equilibrium the rate of formation is equal to the rate of destruction
"forward and reverse rxns are proceeding @ the same rate"
- equilibrium can only occur when the system is CLOSED (nothing can escape)

Single or Double headed arrows



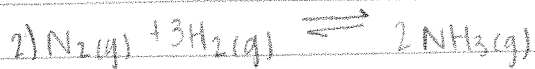
powered the Apollo spacecraft

very product favored

back reaction is very rare

not much reactant is left at end

single headed arrow



preparation of ammonia

only 15% of reactants are converted

double headed arrow

at EQ. not much product exists

- whether a reaction is product favored or reactant favored depends on the driving forces for reaction

- we can define a constant, K tells us