

**Le Châtelier's Principle**

A dynamic equilibrium tends to respond so as to relieve the effect of any change in the conditions that affect the equilibrium.

Type of reaction	Change to system	Effect on $K_c$	Direction of change
all reactions	increasing any reactant concentration or decreasing any product concentration	no effect	toward products
	decreasing any reactant concentration or increasing any product concentration	no effect	toward reactants
	using a catalyst	no effect	no change
exothermic	increasing temperature	decreases	toward reactants
	decreasing temperature	increases	toward products
endothermic	increasing temperature	increases	toward products
	decreasing temperature	decreases	toward reactants
equal number of reactant and product gas molecules	changing the volume of the container or adding a non-reacting gas	no effect	no change
more gaseous product molecules than reactant gaseous molecules	decreasing the volume of the container at constant temperature	no effect	toward reactants
fewer gaseous product molecules than reactant gaseous molecules	decreasing the volume of the container at constant temperature	no effect	toward products
	adding a non-reacting gas	no effect	no change
	increasing the volume of the container at constant temperature	no effect	toward reactants