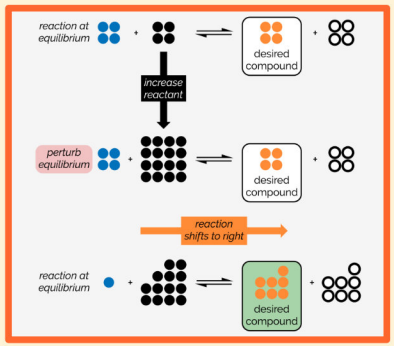
HIGHLIGHTS

- State Le Chatelier's Principle
- Effect of changing concentration
- Effect of changing pressure
- Effect of changing temperature



Reactions are at equilibrium, and, as long as you don't perturb or stress the equilibrium, the concentrations will remain constant. Alter the conditions, and the reaction will shift in one direction or another in order to minimize or counteract the change. This observation is generally known as ***Le Chatelier's Principle***. This is a description of the change in reaction not an explanation of the change.

If you understand Le Chatelier's Principle, you can use it to push a reaction in a desired direction and maximize the amount of desired product that you can prepare.

CHEMISTRY CLASSICS

LE CHATELIER'S PRINCIPLE

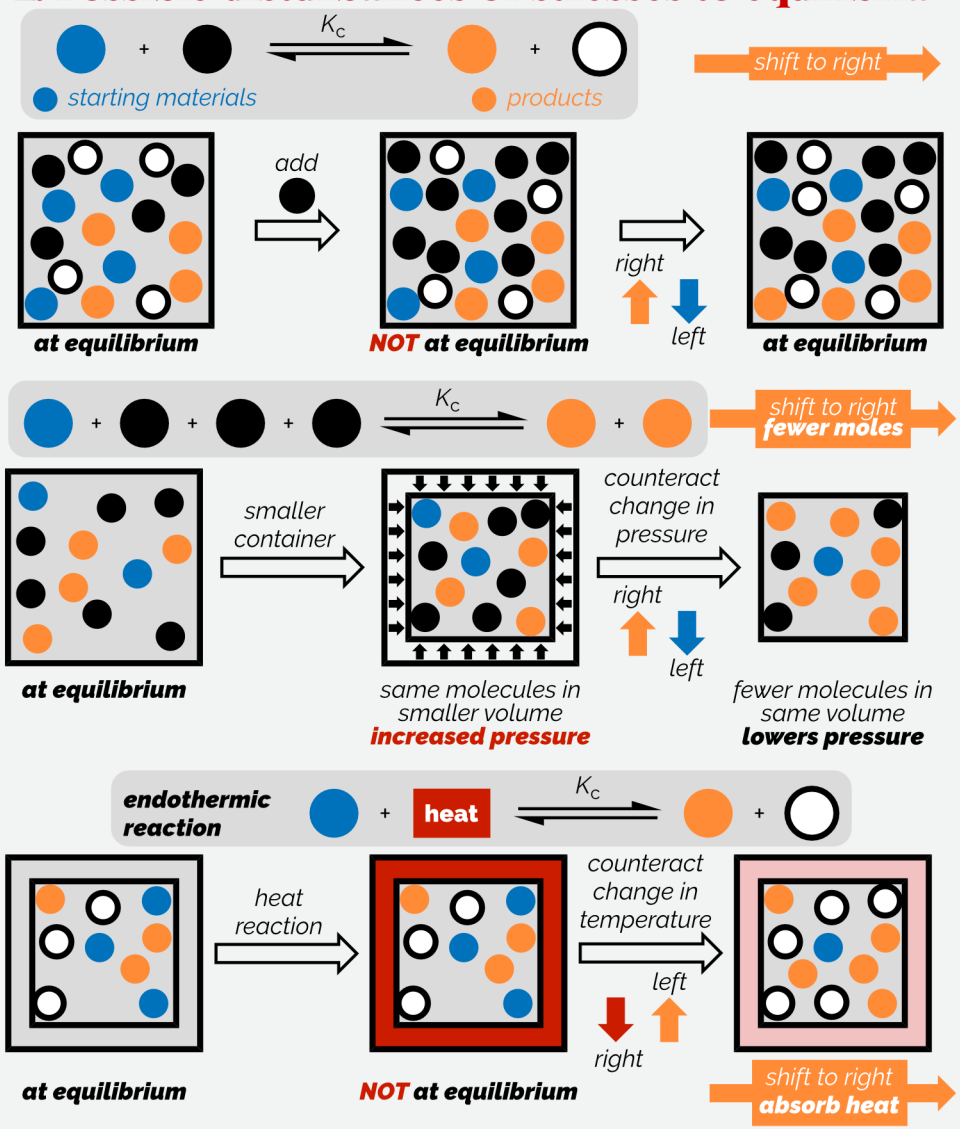
GETTING WHAT YOU WANT FROM AN EQUILIBRIUM REACTION

Le Chatelier's Principle (*getting what you want from equilibrium reactions*)

1. Le Chatelier's Principle

When a chemical system at equilibrium is disturbed, it responds by shifting the equilibrium composition in such a way to counteract the change.

2. Possible disturbances or stresses to equilibria



3. The effect of changing the conditions

An example of an exothermic reaction

[starting materials] + [starting materials] ⇌ [products] + HEAT

Condition	Change	Effect
concentration	increase **[SM]**	→ favours **product**
	decrease **[SM]**	← favours **SM**
	increase **[products]**	← favours **SM**
	decrease **[products]**	→ favours **product**
pressure	increase **pressure**	→ favours **product** *reaction gives smallest number of molecules*
	decrease **pressure**	← favours **SM** *reaction gives largest number of molecules*
temperature	increase **temperature**	← favours **SM** *reaction favours endothermic reaction*
	decrease **temperature**	→ favours **product** *reaction favours exothermic reaction*