

# Le Chatelier's Principle.

A stress applied to a system at equilibrium will shift the position of equilibrium in order to reduce the stress.

<u>Type of Stress</u>	<u>Equilibrium Shifts</u>	<u>Why?</u>
$[reactant] \uparrow$ <sup>add</sup>	right (products)	• to use up the extra reactant
$[reactant] \downarrow$ <sup>remove</sup>	left (reactants)	• to create more reactant
$[product] \uparrow$	left (reactants)	• to use up the extra product
$[product] \downarrow$	right (products)	• to make more product
Volume $\uparrow$ (P $\downarrow$ )	to the side w/ more mols of gas	• to $\uparrow$ P again
Volume $\downarrow$ (P $\uparrow$ )	to the side w/ less mols of gas	• to $\downarrow$ P again
Temperature $\uparrow$ (endothermic)	right (product)	• to $\downarrow$ T
Temperature $\uparrow$ (exothermic)	left (reactants)	• to $\downarrow$ T
Temperature $\downarrow$ (endothermic)	left (reactants)	• to $\uparrow$ T
Temperature $\downarrow$ (exothermic)	right (products)	• to $\uparrow$ T

Add a catalyst never shifts!

