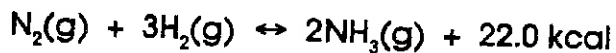


LE CHATELIER'S PRINCIPLE

Name KEY

Le Chatelier's Principle states that when a system at equilibrium is subjected to a stress, the system will shift its equilibrium point in order to relieve the stress.

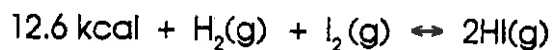
Complete the following chart by writing left, right or none for equilibrium shift, and decreases, increases or remains the same for the concentrations of reactants and products, and for the value of K.



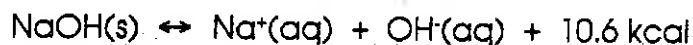
Stress	Equilibrium Shift	[N ₂]	[H ₂]	[NH ₃]	K
1. Add N ₂	right	—	decreases	increases	remains the same
2. Add H ₂	RIGHT	DECREASE	—	INCREASE	SAME
3. Add NH ₃	LEFT	INCREASE	INCREASE	—	SAME
4. Remove N ₂	LEFT	—	INCREASE	DECREASE	SAME
5. Remove H ₂	LEFT	INCREASE	—	DECREASE	SAME
6. Remove NH ₃	RIGHT	DECREASE	DECREASE	—	SAME
7. Increase Temperature	LEFT	INCREASE	INCREASE	DECREASE	DECREASE
8. Decrease Temperature	RIGHT	DECREASE	DECREASE	INCREASE	INCREASE
9. Increase Pressure	RIGHT	DECREASE	DECREASE	INCREASE	SAME
10. Decrease Pressure	LEFT	INCREASE	INCREASE	DECREASE	SAME

LE CHATELIER'S PRINCIPLE CONTINUED

Name _____



Stress	Equilibrium Shift	[H ₂]	[I ₂]	[HI]	K
1. Add H ₂	right	—	decreases	increases	remains the same
2. Add I ₂	RIGHT	↓	—	↑	SAME
3. Add HI	LEFT	↑	↑	—	SAME
4. Remove H ₂	LEFT	—	↑	↓	SAME
5. Remove I ₂	LEFT	↑	—	↓	SAME
6. Remove HI	RIGHT	↑	↑	—	SAME
7. Increase Temperature	RIGHT	↓	↓	↑	↑
8. Decrease Temperature	LEFT	↑	↑	↓	↓
9. Increase Pressure	RIGHT	↓	↓	↑	SAME
10. Decrease Pressure	LEFT	↑	↑	↓	SAME



(Remember that pure solids and liquids do not affect equilibrium values.)

Stress	Equilibrium Shift	Amount NaOH(s)	[Na ⁺]	[OH ⁻]	K
1. Add NaOH(s)	NONE	—	SAME	SAME	SAME
2. Add NaCl (Adds Na ⁺)	LT.	↑	—	↓	SAME
3. Add KOH (Adds OH ⁻)	LT.	↑	↓	—	SAME
4. Add H ⁺ (Removes OH ⁻)	RT.	↓	↑	—	SAME
5. Increase Temperature	LT.	↑	↓	↓	↓
6. Decrease Temperature	RT.	↓	↑	↑	↑
7. Increase Pressure	NONE	SAME	SAME	SAME	SAME
8. Decrease Pressure	NONE	SAME	SAME	SAME	SAME

RT. → RT. → RT. → RT. → RT. → RT. → RT. → RT. → RT. → RT.