

Equilibrium Problem Chart

Q#	Equation	Stressor	Shift Left or Right?	Changes?
1	$N_2(g) + O_2(g) \rightleftharpoons 2NO(g)$	$\uparrow [N_2]$ \uparrow reactant	R	$[NO] \uparrow$ $[N_2] [O_2] \downarrow$
2	$H_2(g) + I_2(g) \rightleftharpoons 2HI(g)$	$\uparrow [HI]$ \uparrow product	L	$[H_2] [I_2] \uparrow$ $[HI] \downarrow$
3	$CO(g) + H_2O(g) \rightleftharpoons CO_2(g) + H_2(g)$	$\downarrow [H_2]$ \downarrow product	R	$[CO_2] [H_2] \uparrow$ $[CO] [H_2O] \downarrow$
4	$2SO_2(g) + O_2(g) \rightleftharpoons 2SO_3(g)$ <small>3 moles \rightleftharpoons 2 moles</small>	\uparrow total pressure	R	$n \downarrow$ Pressure \downarrow $[SO_3] \uparrow$ $[SO_2] [O_2] \downarrow$
5	$3O_2(g) \rightleftharpoons 2O_3(g)$	\downarrow total pressure	L	$[O_2] \uparrow$ $n \uparrow$ $[O_3] \downarrow$ $p \uparrow$
6	$H_2O_2(l) \rightleftharpoons H_2O(l) + O_2(g)$	$\uparrow [H_2O_2]$	N.C.	N.C (no change)
7	$CO(g) + 2H_2(g) \rightleftharpoons CH_3OH(g)$	Add Argon gas	N.C	N.C
8	$CH_4(g) + 2O_2(g) \rightleftharpoons CO_2(g) + 2H_2O(g) + \text{heat}$	$\uparrow T$ (T is a product!)	L	$[CH_4] [O_2] \uparrow$ $[CO_2] [H_2O] \downarrow$ $T \downarrow$

$\Delta H = -5 \text{ kJ}$
exo