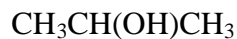


_____/_____: 08-11-2015 _____: 3

.1 - .5

μμ

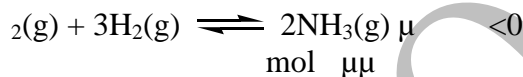
1.



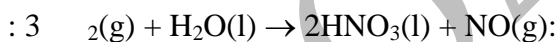
μ +1 +2
μ 0 +2

μ -1 +1
μ , μ

2.



3.



4.



μ [SO₂] = [O₂] = [SO₃] μ [O₂] < [SO₃]
μ [SO₃] < [O₂] μ [O₂] = 2[SO₃]

5.

μ 200 ml μ HCl μ pH=2 μ 200 ml , μ
μ pH: μ 2 μ 2 μ 2 μ

6.

Le Chatelier

B.1

(μ) .

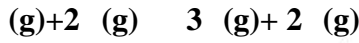
- μ , μ μ μ μ ,
- Ca , μ pH > 7 25 C.

.2

$\mu\mu$

μ

μ



i)

μ

$\mu\mu$

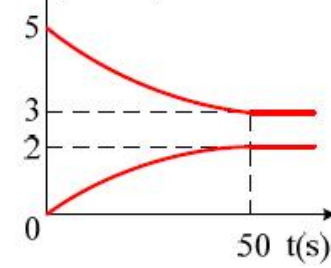
μ

C (mol/L)

ii) $\mu\mu$
 μ

$\mu\mu$

μ 0-50s:



i)

μ

ii)

μ

μ

μ

μ $t_1 = 10s$

$[] = 2[]$.

μ 0-10s:

i) μ

ii) μ

μ

μ

5+5+5

.1 μ

μ H_2SO_4

Cl

μ

500mL μ

$K_2Cr_2O_7$

μ

6,72L

Cl_2 (STP)

μ $K_2Cr_2O_7$.

Cl_2

1L (

μ $t =$

0) μ

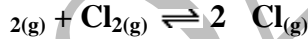
μ

μ

2,

μ t_1

:



$Kc = \frac{1}{4}$

$1 C.$

4+3

.2 μ

μ

μ

μ

μ

$2 C (2 > 1),$

μ t_2

μ

Kc'

$2 C.$

0,1 mol.

)

μ

μ

μ

)

$\mu\mu$

Cl_2

HCl

μ

μ 0

$t_v,$

$t_v > t_2.$

4+3+3

.3 μ

μ

HCl (0.1 mol)

μ (1) μ

1000 mL.

pH

μ

1.

)

)

pH = 13

μ

3 μ

pH = 7 (25 C);

μ

1 μ

μ

a()₂ (2)

)

μ

3;

2+4+2

!

1. 2. 3. 4. 5. 6. 109-110

B.1

1. μ μ μ μ
2. $\text{Ca} + 2\text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2 + \text{H}_2$ $\text{Ca(OH)}_2 \rightarrow \text{Ca}^{2+} + 2\text{OH}^-$ (μ)
3. $K_c = \frac{[\text{CO}][\text{Cl}_2]}{[\text{COCl}_2]}$ $K_c = \frac{[\text{COCl}_2]^2}{[\text{CO}]^2[\text{Cl}_2]^2}$ $K_c = \frac{1}{K_c^2}$
4. μ μ μ
5. μ (HCl).

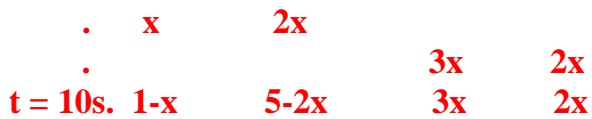
B.2



- μ (Fe μ)
- μ Le Chatelier μ
- μ (μ μ mol μ) $(C =$
- n/V)
- μ Le Chatelier, μ
- μ (μ μ)

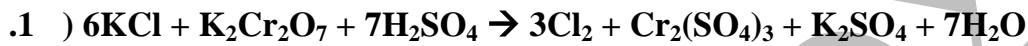
B.3 . 72

- i. μ
- ii. $\mu = -21 \text{ kJ}$
- iii. $\mu \text{ Ea} = 15 \text{ kJ}$
- iv. $\mu \text{ Ea} = 36 \text{ kJ}$ $\mu = 21$
- kJ



$[] = 2[]$, $2x = 2-2x$ $x = 0.5M$. , $u_{-} = -\frac{\Delta[A]}{\Delta t} = \frac{x}{10} = \frac{5}{100} M/s$

ii) $u_B = 2u_{-} = \frac{10}{100} M/s$
 $u_{\Gamma} = 3u_{-} = \frac{15}{100} M/s$



STP

$Cl_2: n_1 = \frac{V}{V_m} = \frac{6,72L}{22,4L/mol} = 0.3mol$

μ $K_2Cr_2O_7$:

$n_2 = 0.1 mol$ $c = \frac{n_2}{V} = \frac{0.1mol}{0.5L} = 0.2M$



x

Kc:

$Kc = \frac{[HCl]^2}{[H_2][Cl_2]} \Rightarrow \frac{1}{4} = \frac{(2x)^2}{(0,3-x)^2} \Rightarrow \sqrt{\frac{1}{4}} = \sqrt{\frac{(2x)^2}{(0,3-x)^2}}$

$\frac{1}{2} = \frac{2x}{0.3-x} \Rightarrow x = 0.06mol$

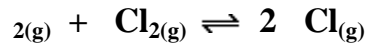
μ :

μ μ μ μ μ

0.6 mol HCl

$A = \frac{n_{f...r|tz|}}{n_{vS...y|z|}} \cdot 100\% \Rightarrow A = \frac{0.12}{0.6} \cdot 100\% = 20\%$

2)



X.I	0.24	0.24	0.12	(mol)
A	-	-	0.02	$2 \text{ } ^\circ\text{C}$
N.X.I (t ₂)	0.01	0.01	-	
	0.25	0.25	0.1	

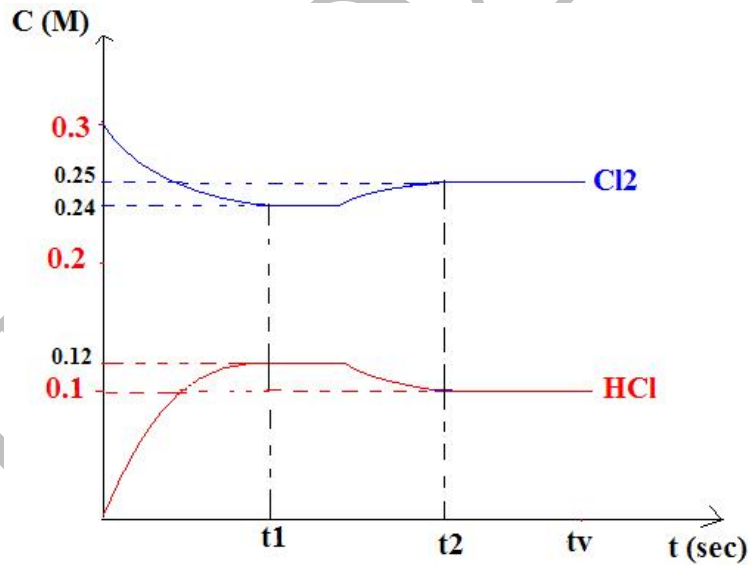
Kc':

$$Kc' = \frac{[HCl]^2}{[H_2][Cl_2]} = \frac{(0.1)^2}{(0.25)^2} \Rightarrow Kc' = \left(\frac{1}{25}\right)^2 = \left(\frac{100}{250}\right)^2 \Rightarrow Kc' = 0.4^2 = 0.16$$

)

Le Chatelier,

)



3)

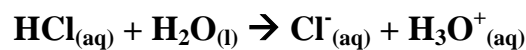
c₁

μ

HCl.

$$c_1 = \frac{0.1 \text{ mol}}{1L} = 0.1M \text{ . To HCl}$$

:



0.1M
/ 0.1

0.1
0.1

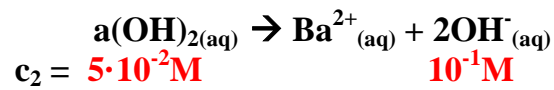
$$pH = -\log[H_3O^+] = 1$$

)

$$\mu_1: n_{HCl} = c_1 V_1 = 0.1 V_1$$

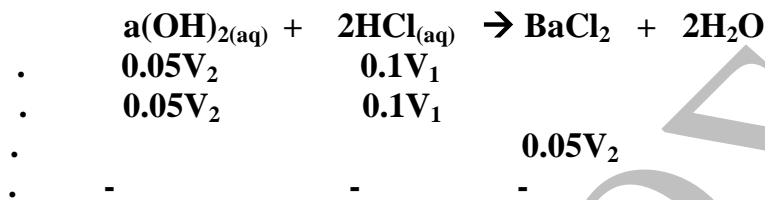
μ_2 : pH = 13, pOH = 1. , $[\text{OH}^-] = 10^{-1}\text{M}$.

$\text{a}(\text{OH})_2$ μ μ μ :



$$n_{\text{Ba}(\text{OH})_2} = c_2 V_2 = 5 \cdot 10^{-2} V_2 = 0.05 V_2$$

μ_3 : pH = 7. μ :



$$\mu \qquad n_{\text{HCl}} = 2n_{\text{Ba}(\text{OH})_2} \quad c_1 V_1 = 2c_2 V_2$$

$$: 0.1V_1 = 0.1V_2 \quad \frac{V_1}{V_2} = \frac{0.1}{0.1} = 1$$

$$) c_3 = [\text{BaCl}_2] = \frac{0.05V_2}{V_1 + V_2} = \frac{0.05V_2}{V_2 + V_2} \Rightarrow c_3 = \frac{0.05V_2}{2V_2} = 0.025\text{M}$$

104

∴210 9514517

109 &

4

∴210 9355996

μ

μ

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