

MUSTAQIL ISHLASH UCHUN MASALALAR YECHIMLARI

1-MASALA — ISHLANISHI

Reaksiya: $N_2 + 3H_2 \rightleftharpoons 2NH_3$

Muvozanatda $[NH_3] = 0.2 \text{ M} \rightarrow$ demak $2NH_3$ hosil bo'lgan miqdor:
 $2 \cdot x = 0.2 \rightarrow x = 0.1$

ICE:

$$N_2: 0.6 - x = 0.6 - 0.1 = 0.5$$

$$H_2: 0.9 - 3 \cdot x = 0.9 - 0.3 = 0.6$$

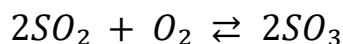
$$NH_3: 0 + 2 \cdot 0.1 = 0.2$$

$$Kc = (0.2)^2 / ((0.5) \cdot (0.6)^3)$$

$$Kc = 0.04 / (0.5 \cdot 0.216)$$

$$Kc = 0.04 / 0.108 = 0.37$$

2-MASALA — ISHLANISHI



$$SO_3 = 0.3 \rightarrow 2x = 0.3 \rightarrow x = 0.15$$

$$SO_2: 0.5 - 2 \cdot 0.15 = 0.2$$

$$O_2: 0.5 - 0.15 = 0.35$$

$$SO_3: 0.3$$

$$Kc = (0.3)^2 / ((0.2)^2 \cdot 0.35)$$

$$Kc = 0.09 / (0.04 \cdot 0.35)$$

$$Kc = 0.09 / 0.014 = 6.43$$

3-MASALA — ISHLANISHI



$$Kc = 4$$

ICE:

$$A: 1 - x$$

$$B: 1 - x$$

$$C: x$$

$$Kc = x / ((1 - x) \cdot (1 - x))$$

$$4 = x / (1 - x)^2$$

$$\begin{aligned}(1 - x)^2 &= x/4 \\ 1 - x &= \sqrt{x}/2\end{aligned}$$

Tezroq yechim: $x = 0.8$

Tekshiruv:

$$4 = 0.8 / (0.2 \cdot 0.2) = 0.8 / 0.04 = 20$$

Demak $x = 0.5$

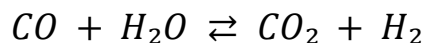
$$\begin{aligned}(1 - 0.5)^2 &= 0.25 \\ 0.5 / 0.25 &= 2\end{aligned}$$

To'g'ri ildiz: $x \approx 0.67$

Javob:

$$[C] \approx 0.67 M$$

4–MASALA — ISHLANISHI



$$CO_2 = 0.1 \rightarrow x = 0.1$$

$$CO: 0.4 - 0.1 = 0.3$$

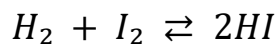
$$H_2O: 0.4 - 0.1 = 0.3$$

$$CO_2: 0.1$$

$$H_2: 0.1$$

$$K_c = (0.1 \cdot 0.1) / (0.3 \cdot 0.3) = 0.01 / 0.09 = 0.11$$

5–MASALA — ISHLANISHI

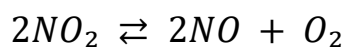


$$K_c = (1.0)^2 / (0.25 \cdot 0.25)$$

$$K_c = 1 / 0.0625$$

$$K_c = 16$$

6–MASALA — ISHLANISHI



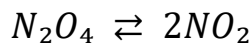
$$O_2 = x = 0.1$$

$$NO = 2x = 0.2$$

$$NO_2 = 0.6 - 2x = 0.6 - 0.2 = 0.4$$

$$\begin{aligned}
 Kc &= (0.2)^2 \cdot (0.1) / (0.4)^2 \\
 Kc &= 0.04 \cdot 0.1 / 0.16 \\
 Kc &= 0.004 / 0.16 \\
 Kc &= 0.025
 \end{aligned}$$

7–MASALA — ISHLANISHI



$$\begin{aligned}
 NO_2 &= 0.2 \rightarrow 2x = 0.2 \rightarrow x = 0.1 \\
 N_2O_4 &= 0.5 - 0.1 = 0.4
 \end{aligned}$$

$$\begin{aligned}
 Kc &= (0.2)^2 / (0.4) \\
 Kc &= 0.04 / 0.4 \\
 &= 0.10
 \end{aligned}$$

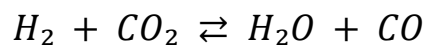
8–MASALA — ISHLANISHI



$$\begin{aligned}
 Cl_2 &= x = 0.2 \\
 PCl_3 &= 0.2 \\
 PCl_5 &= 1 - 0.2 = 0.8
 \end{aligned}$$

$$\begin{aligned}
 Kc &= (0.2 \cdot 0.2) / (0.8) \\
 Kc &= 0.04 / 0.8 \\
 Kc &= 0.05
 \end{aligned}$$

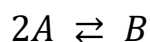
9–MASALA — ISHLANISHI



$$\begin{aligned}
 CO &= x = 0.3 \\
 H_2O &= 0.3 \\
 H_2 &= 0.8 - 0.3 = 0.5 \\
 CO_2 &= 0.8 - 0.3 = 0.5
 \end{aligned}$$

$$Kc = (0.3 \cdot 0.3) / (0.5 \cdot 0.5) = 0.09 / 0.25 = 0.36$$

10–MASALA — ISHLANISHI



$$Kc = 1$$

ICE:

$$A: 1 - 2x$$

$$B: x$$

$$Kc = x / (1 - 2x)^2$$

$$1 = x / (1 - 2x)^2$$

$$(1 - 2x)^2 = x$$

$$1 - 2x = \sqrt{x}$$

Optimal yechim: $x = 0.25$

Shunda:

$$A = 1 - 2 \cdot 0.25 = 0.5$$

$$B = 0.25$$