

O-L 89 - 94
S-I 68 - 71

Ionic

S-I
Q)

$$K_{sp} = 4 \left(10^{-3}\right)^3 = 4 \times 10^{-9}$$

$$[\text{Ag}^+] = 2 \times 10^{-3}$$

$$\frac{2 \times 10^{-3} - 2 \times 10^{-4}}{18 \times 10^{-4} \text{ mol}}$$



$$\text{Ag}_2\text{CrO}_4 = \frac{18 \times 10^{-4}}{2}$$

$$(2S)^2 (0.1) = 4 \times 10^{-9}$$

$$[\text{Ag}^+]^2 = 4 \times 10^{-8}$$

$$[\text{Ag}^+] = 2 \times 10^{-4}$$

(92)

$$[\text{Ag}^+] = \frac{10^{-5}}{100} = 10^{-7}$$

$$[\text{Br}^-] = \frac{2 \times 10^{-7} \times 50}{100}$$
$$= 10^{-7}$$

$$Q = 10^{-7} \times 10^{-7} = 10^{-14} < K_{\text{sp}}$$

(94)



$$(\text{Ag}^+) (10^{-5}) = 10^{-10}$$

$\boxed{[\text{Ag}^+] = 10^{-5}}$

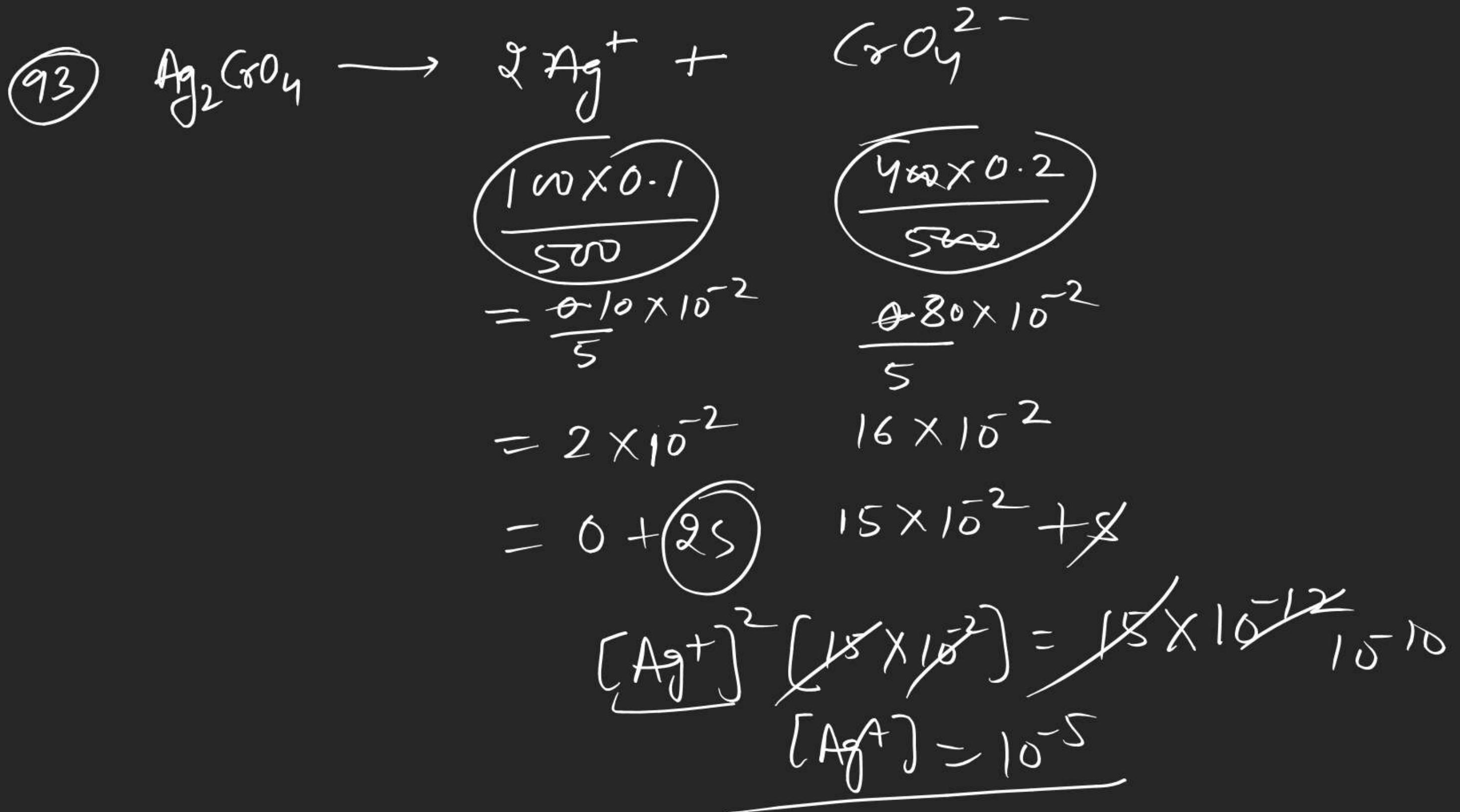
$$\frac{10^{-5} \times 100}{1000} = 10^{-6}$$

$$= 4 \times 10^{-5} - 10^{-5}$$

$$\begin{matrix} \text{charge} \\ \text{in conc} \end{matrix} = 3 \times 10^{-5}$$

$$\underline{\text{mole ppt}} = 3 \times 10^{-5} \times \frac{100}{1000} = 3 \times 10^{-6}$$

$$\boxed{4 \times 10^{-6}}$$

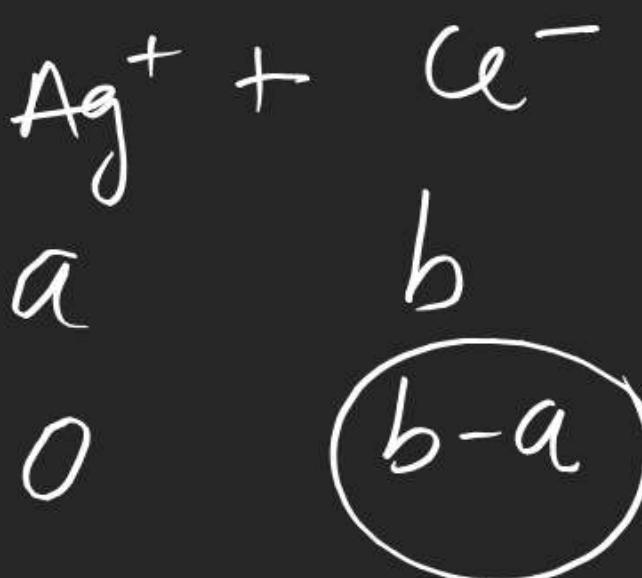


Q. In 0.1 M AgNO_3 soln Cl^- are added such that its conc. becomes 0.01 M. find final Ag^+ conc. $K_{\text{sp}}(\text{AgCl}) = 10^{-10} \text{ M}^2$

$$10^{-10} = K_{\text{sp}} = [\text{Ag}^+] [\text{Cl}^-]$$

$$10^{-10} = [\text{Ag}^+] (0.01)$$

$$10^{-8} = [\text{Ag}^+]$$



Selective pptn.

$$[\text{Ag}^+]$$

$$[\text{Ag}^+] = 10^{-9}$$

$$K_{\text{sp}} = 10^{-10}$$

$$[\text{Cl}^-]$$

✓

$$[\text{Ag}^+]_{\text{min}} = 10^{-13}$$

$$K_{\text{sp}} = 10^{-14}$$

$$[\text{Br}^-]$$

$$? \quad (10^{-5})$$

$$[\text{Ag}^+]_{\text{min}} = 10^{-16}$$

$$K_{\text{sp}} = 10^{-17}$$

$$[\text{I}^-]$$

$$? \quad (10^{-8})$$

$$10^{-4}$$

$$10^{-3}$$

$$10^{-2}$$

$$0.1 \text{M}$$

$$0.1 \text{M}$$

$$0.1 \text{M}$$

$$10^{-13}$$

$$10^{-14}$$

$$10^{-15}$$

$$10^{-18}$$

$$\longrightarrow$$

$$\checkmark$$

$$0.1 \text{M}$$

$$0.1 \text{M}$$

$$0.1 \text{M}$$

$$0.1 \text{M}$$

$$0.1 \text{M}$$

$$0.1 \text{M}$$

$$[\text{Ag}^+] [\text{I}^-] = 10^{-17}$$

$$(10^{-9}) [\text{I}^-] = 10^{-17}$$

$$[\text{Ag}^+] [\text{Br}^-] = 10^{-14}$$

$$(10^{-9}) [\text{Br}^-] = 10^{-14}$$



Ag^+ ions are added to a soln containing

$0.1\text{M } \text{Cl}^-$ & $0.1\text{M } \text{CO}_3^{2-}$. find

① Sequence of pptn

② conc. of already ppting ion when other ion starts ppting. $(10^{-4}) = [\text{Cl}^-]$

$$(10^{-6}) [\text{Cl}^-] = 10^{-10}$$

$$[\text{Cl}^-] = 10^{-4}$$

$$\text{Ksp}(\text{AgCl}) = 10^{-10}$$

$$\text{Ksp}(\text{Ag}_2\text{CO}_3) = 10^{-13} \quad \checkmark$$

$$[\text{Ag}^+] (0.1) = 10^{-10}$$

$$[\text{Ag}^+]_{\min} = 10^{-9}$$

$$[\text{Ag}^+]^2 (0.1) = 10^{-13}$$

$$[\text{Ag}^+]_{\min} = 10^{-6}$$

