

SIGMA

1798 Cat. B6

$$[\text{NaHSO}_4] = [\text{Na}_2\text{SO}_4] = 0,150 \text{ M}$$

$$V_0 = 120 \text{ ml}$$

$$[\text{NaOH}] = 0,100 \text{ M} \quad \rightarrow \quad u(\text{NaOH}) = 0,100 \cdot 10 \cdot 10^{-3} = 1,000 \cdot 10^{-3} \text{ mol}$$

$$V(\text{NaOH}) = 10,0 \text{ ml}$$

$$\text{pH}_0 = \text{pK}_{a2} + \log \frac{[\text{A}^-]}{[\text{HA}]} \Rightarrow \text{pH}_0 = \text{pK}_{a2}$$

$$\text{pH}_f = \text{pK}_{a2} + \log \frac{u(\text{A}^-) + u(\text{NaOH})}{u(\text{HA}) - u(\text{NaOH})} = \text{pK}_{a2} + \log \left[\frac{(0,150 \cdot 0,120) + 1,000 \cdot 10^{-3}}{(0,150 \cdot 0,120) - 1,000 \cdot 10^{-3}} \right]$$

$$\text{pH}_f = \text{pK}_{a2} + 0,048$$

$$\Delta \text{pH} = \text{pH}_f - \text{pH}_0 = \text{pK}_{a2} + 0,048 - \text{pK}_{a2} = \underline{\underline{0,048}}$$