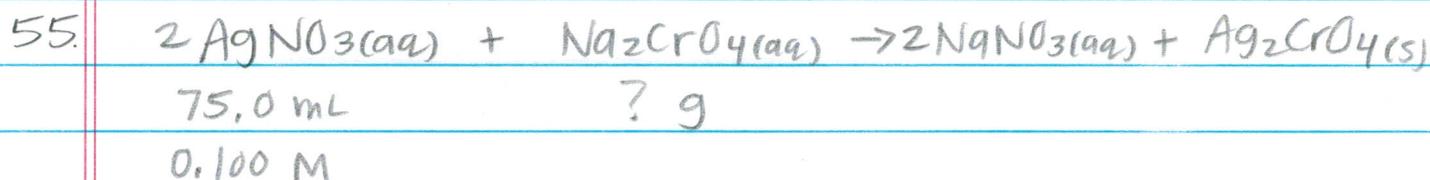
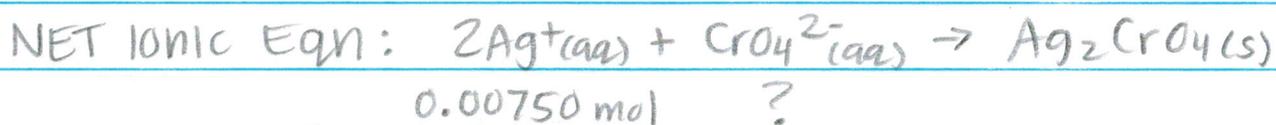


CHAPTER 4



$$[\text{Ag}^+] = 1 \times 0.100 \text{ M} = 0.100 \text{ M}$$

$$\text{mol Ag}^+ = (0.100 \text{ M})(0.0750 \text{ L}) = 0.00750 \text{ mol Ag}^+$$



$$\frac{0.00750 \text{ mol Ag}^+}{2 \text{ mol Ag}^+} \left| \frac{1 \text{ mol CrO}_4^{2-}}{1 \text{ mol CrO}_4^{2-}} \right. = 0.00375 \text{ mol CrO}_4^{2-}$$

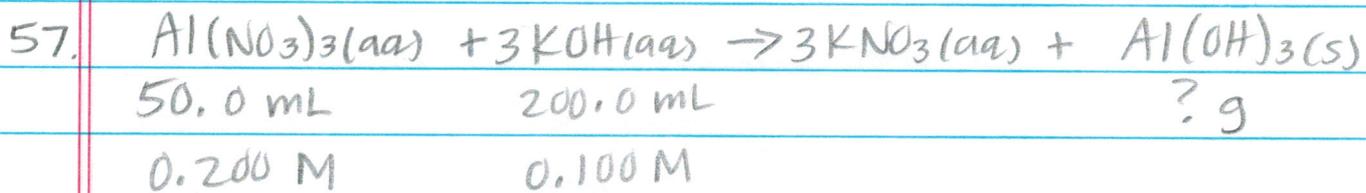
$$\frac{0.00375 \text{ mol CrO}_4^{2-}}{1 \text{ mol CrO}_4^{2-}} \left| \frac{1 \text{ mol Na}_2\text{CrO}_4}{1 \text{ mol Na}_2\text{CrO}_4} \right. \left| \frac{161.98 \text{ g Na}_2\text{CrO}_4}{1 \text{ mol Na}_2\text{CrO}_4} \right. = \boxed{0.607 \text{ g Na}_2\text{CrO}_4}$$

★ Alternative Method - DO All Math in one "grid"

you know that all Ag^+ is consumed, thus all AgNO_3 is consumed making AgNO_3 the limiting reactant, which determines how much product is made & how much Na_2CrO_4 is needed.

$$\frac{0.00750 \text{ mol AgNO}_3}{2 \text{ mol AgNO}_3} \left| \frac{1 \text{ mol Na}_2\text{CrO}_4}{1 \text{ mol Na}_2\text{CrO}_4} \right. \left| \frac{161.98 \text{ g Na}_2\text{CrO}_4}{1 \text{ mol Na}_2\text{CrO}_4} \right. = \boxed{0.607 \text{ g Na}_2\text{CrO}_4}$$

CHAPTER 4



Limiting Reactant?

$$(0.200 \text{ M Al}(\text{NO}_3)_3)(0.0500 \text{ L}) = 0.0100 \text{ mol Al}(\text{NO}_3)_3$$

0.0100 mol Al(NO ₃) ₃	1 mol Al(OH) ₃	78.00 g Al(OH) ₃
	1 mol Al(NO ₃) ₃	1 mol Al(OH) ₃
= 0.780 g Al(OH) ₃		

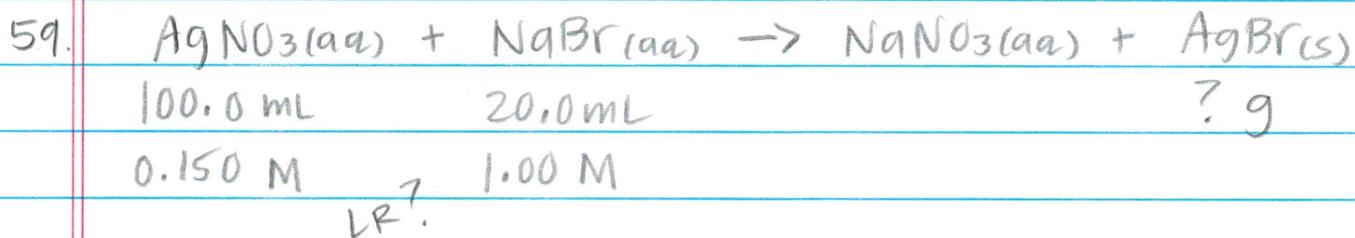
$$(0.100 \text{ M KOH})(0.2000 \text{ L}) = 0.0200 \text{ mol KOH}$$

0.0200 mol KOH	1 mol Al(OH) ₃	78.00 g Al(OH) ₃
	3 mol KOH	1 mol Al(OH) ₃
= 0.520 g Al(OH) ₃		

Theoretical yield = Max Amt.

compare

CHAPTER 4



$$(0.150 \text{ M AgNO}_3)(0.1000 \text{ L}) = 0.0150 \text{ mol AgNO}_3$$

0.0150 mol AgNO ₃	mol AgBr	187.8 g AgBr
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	1 mol AgNO ₃	1 mol AgBr
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$$= \boxed{2.82 \text{ g AgBr}}$$

Theoretical yield = Max Amt.

$$(1.00 \text{ M NaBr})(0.0200 \text{ L}) = 0.0200 \text{ mol NaBr}$$

0.0200 mol NaBr	mol AgBr	187.8 g AgBr
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	1 mol NaBr	1 mol AgBr
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$$= 3.76 \text{ g AgBr}$$

compare