

Two Step Conversions

May-08-2024 8:20 PM 1/4

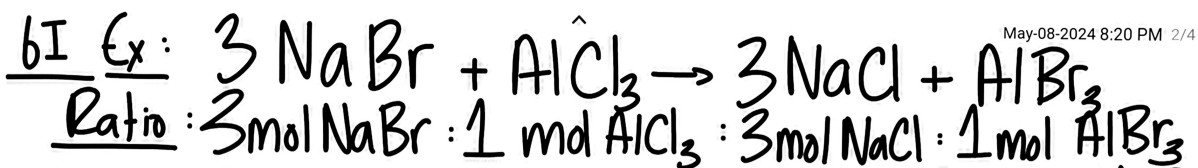
Form 1: $\text{mass}_A \rightarrow \text{mol}_B$

Step 1	$\text{start}_A (\text{g})$	1 mol_A
$\text{mass}_A \rightarrow \text{mol}_A$		$\text{MM}_A (\text{g})$
Step 2	$(\text{step 1}) \text{mol}_A$	$\frac{(\text{ratio}) \text{mol}_B}{(\text{ratio}) \text{mol}_A}$
$\text{mol}_A \rightarrow \text{mol}_B$		$= \text{mol}_B$

Form 2: $\text{mol}_A \rightarrow \text{mass}_B$

$\text{start}_A (\text{mol})$	$\frac{(\text{ratio}) \text{mol}_B}{(\text{ratio}) \text{mol}_A}$	Step 1
		$\text{mol}_A \rightarrow \text{mol}_B$
$(\text{step 1}) \text{mol}_B$	$\text{MM}_B (\text{g})$	Step 2
	1 mol_B	$\text{mol}_B \rightarrow \text{mass}_B$
	$= \text{g}_B$	

May-08-2024 8:20 PM 2/4



Ratio: $3 \text{mol NaBr} : 1 \text{mol AlCl}_3 : 3 \text{mol NaCl} : 1 \text{mol AlBr}_3$

MM NaBr

Na	1	22.99 g
Br	1	79.90 g
NaBr		102.89 g/mol

Convert 114.0 g NaBr $\rightarrow$ mol NaBr

$114.0 \text{g NaBr} \mid 1 \text{mol NaBr}$

$= 1.11 \text{mol NaBr} \mid 102.89 \text{g NaBr}$

$\text{mol NaBr} \rightarrow \text{mol AlCl}_3$

$\mid 1.11 \text{mol NaBr} \mid 1 \text{mol AlCl}_3$

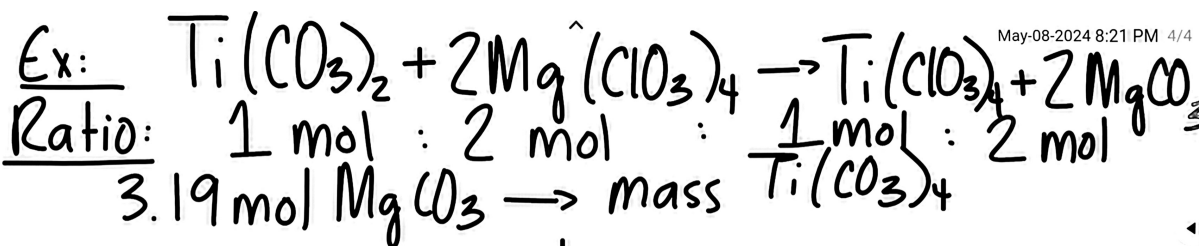
$= 0.37 \text{mol AlCl}_3 \mid 3 \text{mol NaBr}$

Molar Mass w/ Polyatomic Ions

May-08-2024 8:21 PM 3/4

MM $\text{Ti}(\text{CO}_3)_2$		
Ti	1	47.84 g
C	2	12.01 g
O	6	16.00 g
$\text{Ti}(\text{CO}_3)_2$		167.86 g/mol

MM $\text{Ti}(\text{CO}_3)_2$ (alt)		
Ti	1	47.84 g
CO_3	2	60.01 g
$\text{Ti}(\text{CO}_3)_2$		167.86 g/mol
$\text{CO}_3 = 1(12.01) + 3(16.00)$		
$= 60.01 \text{ g/mol}$		



3.19 mol MgCO_3	1 mol $\text{Ti}(\text{CO}_3)_2$	1.59 mol $\text{Ti}(\text{CO}_3)_2$	167.86 g $\text{Ti}(\text{CO}_3)_2$
	2 mol MgCO_3		1 mol $\text{Ti}(\text{CO}_3)_2$
			= 266.90 g $\text{Ti}(\text{CO}_3)_2$

MM $\text{Ti}(\text{CO}_3)_2 = 167.86 \text{ g/mol}$