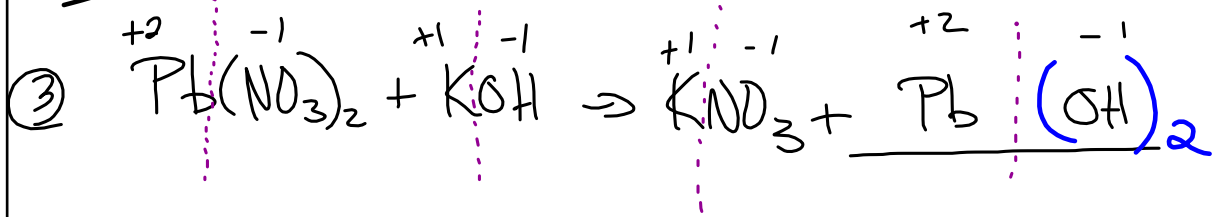


PS 3-1



⑪

|                          |                               |                                     |
|--------------------------|-------------------------------|-------------------------------------|
| <del>132.9041 g Cs</del> | <del>1 mol Cs</del>           | = 2.20666966296 × 10 <sup>-22</sup> |
| <del>1 mol Cs</del>      | 6 × 10 <sup>23</sup> atoms Cs |                                     |

6.023 × 10<sup>23</sup>

Sep 26-7:39 AM

⑦  $A + B + C \rightarrow ABC$

— g + 1.811g + 3.613g = 7.124g

Sep 26-8:05 AM

⑨  $X_2O_3$

60% of mass is X  
(40% of mass is O) <sup>oxygen</sup>

Part  $X_2$  via  $= 0.60$   
Whole  $X_2O_3$

$\frac{100}{X_2O_3} = \frac{0.6}{1}$

$\frac{100}{0.6} = X_2O_3$

$166.67 = X_2O_3$

$X \text{ mass} = 50$

$X_2 + O_3 = 166.67$   
 $2(50) + 3(Ox) = 166.67$   
 $3(Ox) = 66.67$   
 $Ox = 22.22$

Sep 26-8:08 AM

⑮

|   |   |  |   |
|---|---|--|---|
| <del>300 molecules <math>CH_3CO_2H</math></del> | <del>1 mole <math>CH_3CO_2H</math></del>                                  | <del>2 mole O</del>                      | <del><math>6 \times 10^{23}</math> atoms <math>CH_3CO_2H</math></del> |
|   | <del><math>6 \times 10^{23}</math> molecules <math>CH_3CO_2H</math></del> | <del>1 mole <math>CH_3CO_2H</math></del> | <del>1 mole <math>CH_3CO_2H</math></del>                              |

$\rightarrow 600 \text{ atoms. } O$

⑯

|                                     |   |                                     |  |
|-------------------------------------|---|-------------------------------------|--|
| <del>10 <math>NH_4NO_3</math></del> | <del>1 mole <math>NH_4NO_3</math></del> | <b>2 mole N</b>                     | <del><math>6 \times 10^{23}</math> atoms N</del> |
| <del>80 <math>NH_4NO_3</math></del> | <del>1 mole <math>NH_4NO_3</math></del> | <b>1 mole <math>NH_4NO_3</math></b> | <del>1 mole N</del>                              |

Sep 26-8:14 AM

25)  $2\text{CHCl}_3 + 2\text{Cl}_2 \rightarrow 2\text{CCl}_4 + 2\text{HCl}$

11.9g excess (12.6g) ~~etc~~

|                                   |                                    |                                   |                                   |
|-----------------------------------|------------------------------------|-----------------------------------|-----------------------------------|
| <del>11.9g CHCl<sub>3</sub></del> | <del>1 mole CHCl<sub>3</sub></del> | <del>2 mole CCl<sub>4</sub></del> | 152g CCl <sub>4</sub>             |
| 11.9g CHCl <sub>3</sub>           | 118g CHCl <sub>3</sub>             | 2 mole CHCl <sub>3</sub>          | <del>1 mole CCl<sub>4</sub></del> |

15.33g

CALC  
15.33g  
CCl<sub>4</sub>

% yield =  $\frac{12.6}{15.33} * 100 = 82.19\%$

17.8g waste

Sep 26-8:23 AM

21)  $\text{Ru}_3(\text{CO})_{12} + 9\text{AsF}_3 \rightarrow 3\text{Ru}(\text{CO})_2(\text{AsF}_3)_3 + 6\text{CO}$

2 mmole 24 mmole ? 6

|                        |      |        |
|------------------------|------|--------|
| 2 Ru(CO) <sub>12</sub> | 3 Ru | = 6 CR |
| Ru(CO) <sub>12</sub>   | Ru   |        |

|                     |      |     |
|---------------------|------|-----|
| 24 AsF <sub>3</sub> | 3 Ru | = 8 |
| 9 AsF <sub>3</sub>  | Ru   |     |

Sep 26-8:29 AM