(#7-2)
CHEMISTRY
Particles, Limiting and Excess #2

Review

$NH_4Cl \rightarrow NH_3 + HCl$
25 molecules ? ?

| | | | |
|---|---|---|---|
| I. | 25 | | |
| S. | -25 | + 25 | +25 |
| E. | 0 | | |

all 1:1 ratios

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Determine the "?" , limiting and amount of excess for the following problems.

2. $Sn + 2Cl_2 \rightarrow SnCl_4$ (Sn ✓LR)
10 atoms 35 molecules ?

| | | | |
|---|---|---|---|
| I. | 10 | 35 | |
| S. | -10 | - 20 | +10 |
| E. | 0 | +15 | |

$10\ Sn \cdot \frac{2}{1} = 20\ Cl_2$ needed

3. $2Na + Cl_2 \rightarrow 2NaCl$ (2Na ✓LR)
25 atoms 25 molecules ?

| | | | |
|---|---|---|---|
| I. | 25 | 25 | |
| S. | -25 | -12.5 | +25 |
| E. | 0 | 12.5 | 25 |

$25 \cdot \frac{1}{2} = 12.5\ Cl_2$

4. $3CH_3I + Al(OH)_3 \rightarrow 3CH_3OH + AlI_3$
255 425 ? ?

| | | | | |
|---|---|---|---|---|
| I. | 255 | 425 | | |
| S. | $-255 \cdot \frac{1}{3} = -85$ | | +255 | +85 |
| E. | 0 | 340 | | |

5. $4Ag + 2H_2S + O_2 \rightarrow 2Ag_2S + 2H_2O$ (4Ag ✓LR)

| | | | | | |
|---|---|---|---|---|---|
| I. | 20 | 10 | 10 | ? | ? |
| S. | -20 | -10 | -5 | +10 | +20 |
| E. | 0 | 0 | +5 | | |

$10\ H_2S \cdot \frac{4}{2} = 20$ $\quad 10 \cdot \frac{1}{2} = 5$