Molar mass Calculation:

$KClO_3$: 39.1 + 35.5 + 48.0 = 122.6 g/mol
O_2: 32.0 g/mol

$KClO3_{(s)} \rightarrow KCl_{(s)} + (3/2)\ O_{2\ (g)}$

(1 mol $_{(KClO3)}$)	- 1mol $_{(KCl)}$	= 3/2 mol $_{(O2)}$
122.6	- 74.6	= 48.0

Theoretical value of Percentage of Oxygen in Potassium chlorate:

$$\frac{3 \times 16.0}{122.6} \times 100 = 39.2\%$$

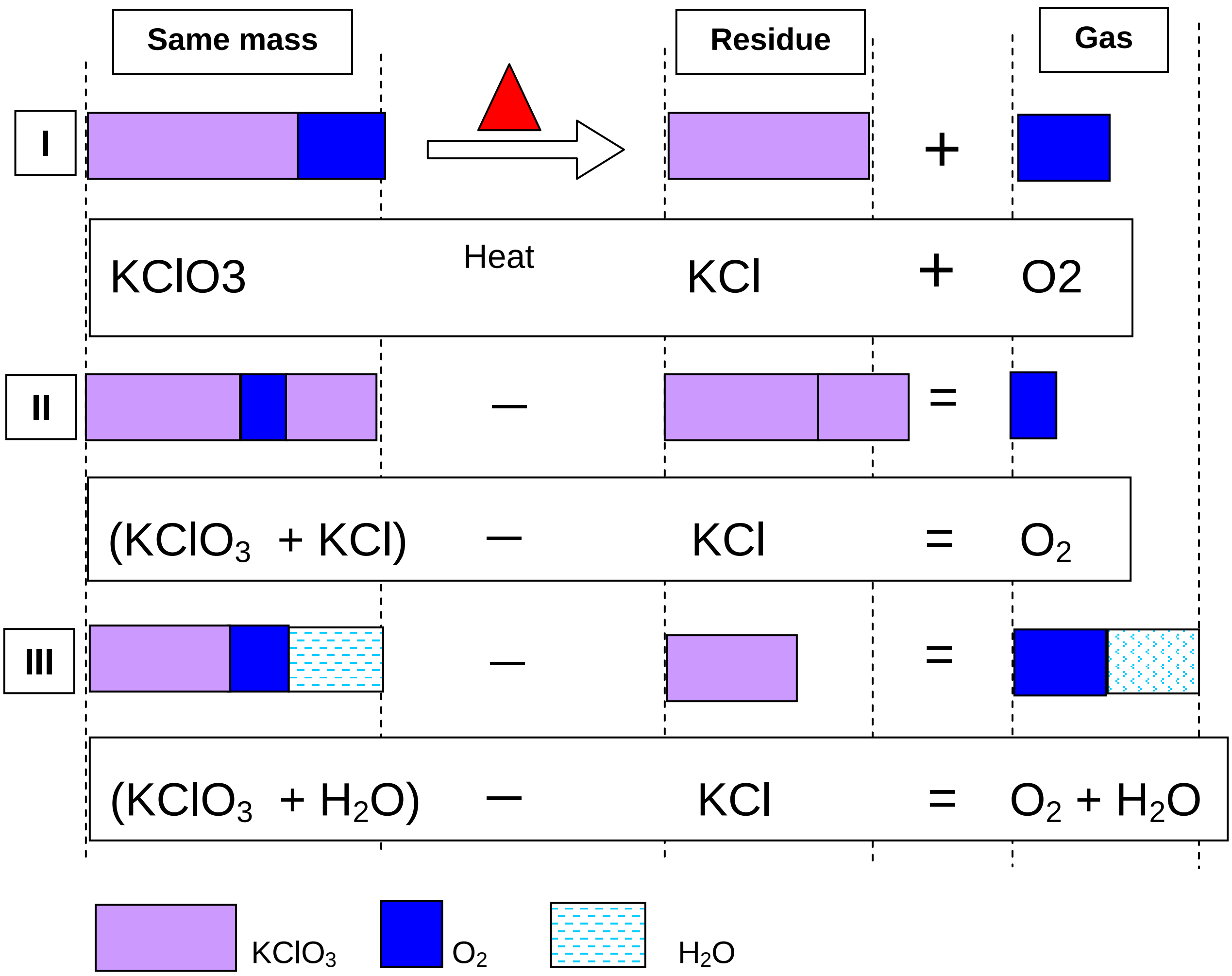
Experimental value of Percentage of Oxygen in Potassium chlorate sample:

$$\frac{Original\ Sample\ Mass \quad - \quad \mathrm{Re}\,sidue\ Mass}{Original\ Sample\ Mass} \times 100 = ?$$

Percentage error in oxygen determination by heating potassium chlorate:

$$\frac{\%O_2\ by\ Exp. \quad - \quad \%O_2\ Theori.}{\%O_2\ Theori} \times 100 = ?$$

Think about these questions:



Suppose we have three different KClO3 samples but with same mass.

- Case I: Dry pure $KClO_3$
  (Releasing oxygen is causing the sample to change its mass after heating)
- Case II: Dry impure $KClO_3$, (contains KCl)
  (More residues will remain after heating)
- Case III: Moisture pure $KClO_3$
  (Releasing water vapor and oxygen are causing the sample to change its mass after heating)