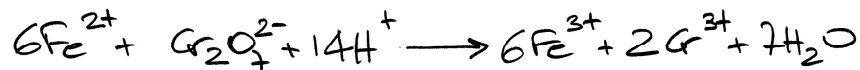
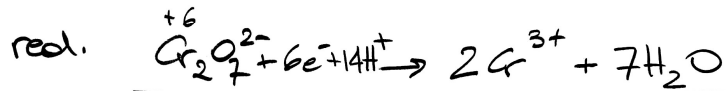
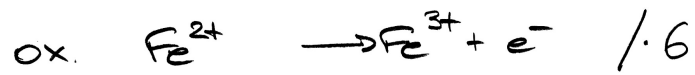
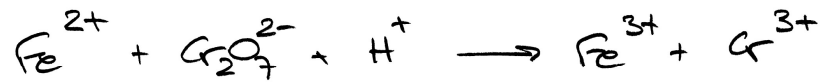
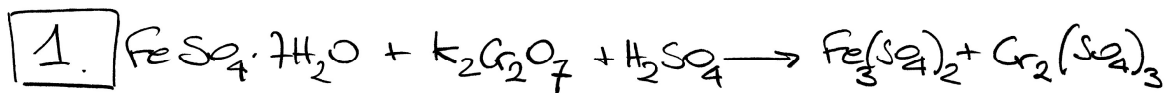


RELAZIONI PONDERALI

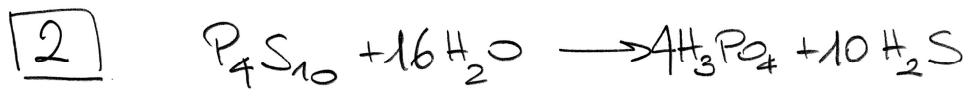


$$m_{\text{K}_2\text{Cr}_2\text{O}_7} = \frac{2.00}{294.18} = 6.80 \cdot 10^{-3} \text{ mol}$$

$$m_{\text{FeSO}_4 \cdot 7\text{H}_2\text{O}} = 6 \cdot m_{\text{K}_2\text{Cr}_2\text{O}_7} = 6 \cdot 6.80 \cdot 10^{-3} = 4.08 \cdot 10^{-2} \text{ mol}$$

$$m_{\text{FeSO}_4 \cdot 7\text{H}_2\text{O}} = m_{\text{FeSO}_4 \cdot 7\text{H}_2\text{O}} \cdot \text{MM}_{\text{FeSO}_4 \cdot 7\text{H}_2\text{O}}$$

$$= 4.08 \cdot 10^{-2} \cdot 278.03 = \boxed{11.3 \text{ g}}$$



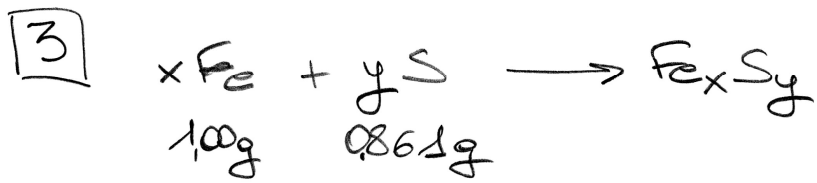
$$n_{\text{P}_4\text{S}_{10}} = \frac{m_{\text{P}_4\text{S}_{10}}}{MM_{\text{P}_4\text{S}_{10}}} = \frac{100.0}{444,676} = 0,2249 \text{ mol}$$

$$n_{\text{H}_3\text{PO}_4} = 4 \cdot n_{\text{P}_4\text{S}_{10}} = 4 \cdot 0,2249 = 0,8996 \text{ mol}$$

$$m_{\text{H}_3\text{PO}_4} = n_{\text{H}_3\text{PO}_4} \cdot MM_{\text{H}_3\text{PO}_4} = 0,8996 \cdot 97,995 = \boxed{87,18 \text{ g}}$$

$$n_{\text{H}_2\text{S}} = 10 \cdot n_{\text{P}_4\text{S}_{10}} = 10 \cdot 0,2249 = 2,249 \text{ mol}$$

$$m_{\text{H}_2\text{S}} = n_{\text{H}_2\text{S}} \cdot MM_{\text{H}_2\text{S}} = 2,249 \cdot 34,092 = \boxed{76,67 \text{ g}}$$

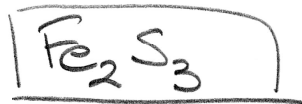


$$n_{\text{Fe}} = \frac{m_{\text{Fe}}}{M_{\text{Fe}}} = \frac{100}{55,845} = 1,79 \cdot 10^{-2} \text{ mol}$$

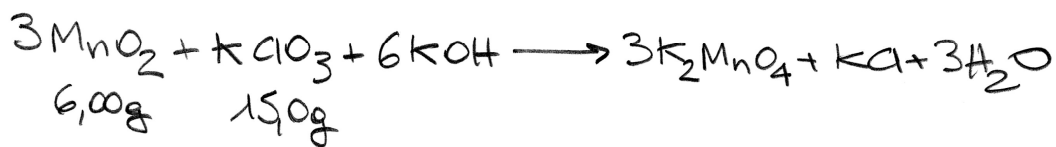
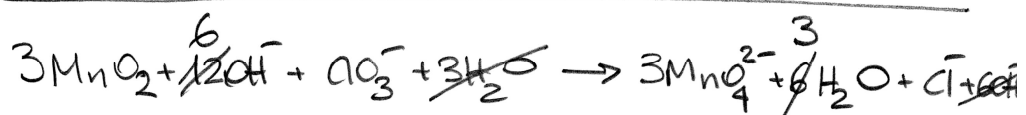
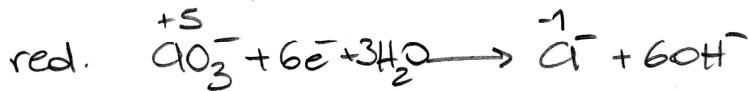
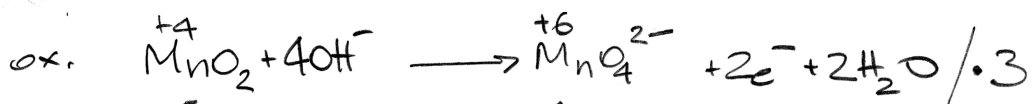
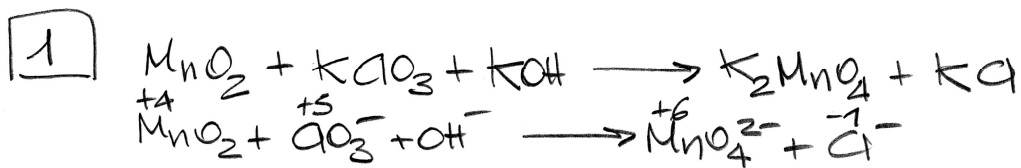
$$n_{\text{S}} = \frac{m_{\text{S}}}{M_{\text{S}}} = \frac{0.861}{32,076} = 2,68 \cdot 10^{-2} \text{ mol}$$

$$x:y = n_{\text{Fe}} : n_{\text{S}}$$

$$\frac{y}{x} = \frac{n_{\text{S}}}{n_{\text{Fe}}} = \frac{2,68 \cdot 10^{-2}}{1,79 \cdot 10^{-2}} = 1,50 = \frac{3}{2}$$



REAGENTE LIMITANTE



$$m_{\text{MnO}_2} = \frac{m_{\text{MnO}_2}}{MM_{\text{MnO}_2}} = \frac{6,00}{86,937} = 6,90 \cdot 10^{-2} \text{ mol}$$

$$m_{\text{KClO}_3} = \frac{m_{\text{KClO}_3}}{MM_{\text{KClO}_3}} = \frac{15,0}{122,55} = 0,122 \text{ mol}$$



inizio	$6,90 \cdot 10^{-2}$	$0,122$	ecc.		
variazione	$-6,90 \cdot 10^{-2}$	$-2,30 \cdot 10^{-2}$		$+6,90 \cdot 10^{-2}$	$+2,30 \cdot 10^{-2}$
fine	—	$0,099$		$6,90 \cdot 10^{-2}$	$2,30 \cdot 10^{-2}$

↑
REAGENTE
LIMITANTE

$$m_{\text{K}_2\text{MnO}_4} = m_{\text{K}_2\text{MnO}_4} \cdot MM_{\text{K}_2\text{MnO}_4} = 6,90 \cdot 10^{-2} \cdot 181,132 =$$

1,25g



inizio	$4.78 \cdot 10^{-2}$	0,117			
variazione	$-4.78 \cdot 10^{-2}$	0,0956	$+4.78 \cdot 10^{-2}$	$+4.78 \cdot 10^{-2}$	$+4.78 \cdot 10^{-2}$
fine	—	$2,14 \cdot 10^{-2}$	$4.78 \cdot 10^{-2}$	$4.78 \cdot 10^{-2}$	$4.78 \cdot 10^{-2}$

↑
REAG. LIM.

$$n_{\text{CaCO}_3} = \frac{m_{\text{CaCO}_3}}{MM_{\text{CaCO}_3}} = \frac{4.78}{100,087} = 4,78 \cdot 10^{-2} \text{ mol}$$

$$n_{\text{HNO}_3} = \frac{m_{\text{HNO}_3}}{MM_{\text{HNO}_3}} = \frac{7,38}{63,01} = 0,117 \text{ mol}$$

$$V_{\text{CO}_2} = \frac{n_{\text{CO}_2} \cdot RT}{P} = \frac{4,78 \cdot 10^{-2} \cdot 0,0821 \cdot 298,15}{1,00} = \boxed{1,17 \text{ L}}$$

RESA DELLE REAZIONI CHIMICHE

1

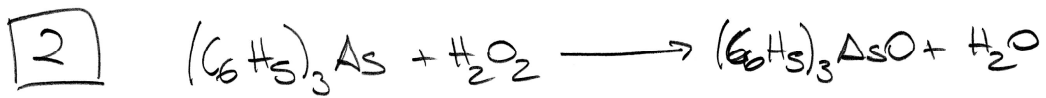
	CH_3COOH	$+$	$\text{CH}_3\text{CH}_2\text{OH}$	\longrightarrow	$\text{CH}_3\text{COOCH}_2\text{CH}_3$	$+$	H_2O
inizio	0,414		0,429				
variazione	-0,414		-0,414		+0,414		+0,414
fine	—		0,015		0,414		0,414

$$n_{\text{CH}_3\text{COOH}} = \frac{m_{\text{CH}_3\text{COOH}}}{MM_{\text{CH}_3\text{COOH}}} = \frac{25,0}{60,328} = 0,414 \text{ mol}$$

$$n_{\text{CH}_3\text{CH}_2\text{OH}} = \frac{m_{\text{CH}_3\text{CH}_2\text{OH}}}{MM_{\text{CH}_3\text{CH}_2\text{OH}}} = \frac{20,0}{46,600} = 0,429 \text{ mol}$$

$$m_{\text{CH}_3\text{COOCH}_2\text{CH}_3} = n_{\text{CH}_3\text{COOCH}_2\text{CH}_3} \cdot MM_{\text{CH}_3\text{COOCH}_2\text{CH}_3} = 0,414 \cdot 88,106 = 35,6 \text{ g teorici}$$

$$\gamma = \frac{m_{\text{ottenuta}}}{m_{\text{teorica}}} = \frac{29,5}{35,6} \cdot 100 = \boxed{82,8\%}$$



$$m_{(\text{C}_6\text{H}_5)_3\text{As}} = \frac{m_{(\text{C}_6\text{H}_5)_3\text{As}}}{MM_{(\text{C}_6\text{H}_5)_3\text{As}}} = \frac{100,0}{306,239} = 0,3265 \text{ mol}$$

$$= m_{(\text{C}_6\text{H}_5)_3\text{AsO}}$$

$$m_{(\text{C}_6\text{H}_5)_3\text{AsO}} = m_{(\text{C}_6\text{H}_5)_3\text{AsO}} \cdot MM_{(\text{C}_6\text{H}_5)_3\text{AsO}} = 0,3265 \cdot 322,238$$

$$= 105,2 \text{ g. TEACI}$$

$$m_{(\text{C}_6\text{H}_5)_3\text{AsO}} \text{ effettiva} = m_{(\text{C}_6\text{H}_5)_3\text{AsO}} \cdot \gamma = 105,2 \cdot \frac{850}{100} =$$

$$= \boxed{89,4 \text{ g}}$$