

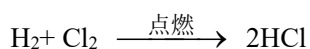
高二化学 化学方程式 合格考复习

一、卤素

(1) Cl_2 与金属反应，生成高价金属氯化物



(2) 氯化氢的工业制法



(氢气和氯气的混合气点燃或强光照射会爆炸；工业制盐酸，氯气在氢气中燃烧)

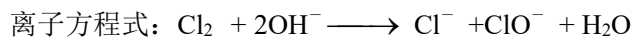
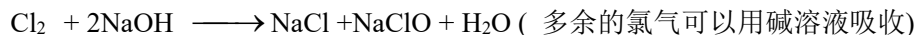
(3) 次氯酸的生成及不稳定性



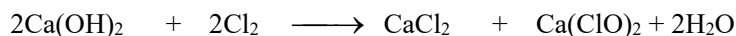
(氯水中的分子： Cl_2 、 H_2O 、 HClO 氯水中的离子： H^+ 、 Cl^- 、 ClO^- 、 OH^-)

HClO 有：①弱酸性 ②不稳定性 ③强氧化性

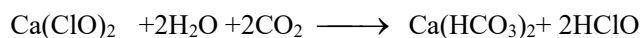
(4) Cl_2 的吸收、次氯酸盐的生成



(5) 漂粉精的生成、漂白原理



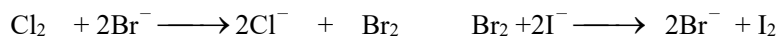
(①工业上用氯气和消石灰反应制取漂粉精 ②漂粉精的有效成分是次氯酸钙)



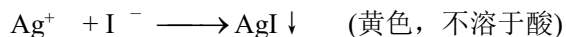
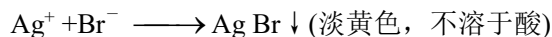
(①漂粉精在水中与空气接触产生次氯酸，有漂白作用 ②次氯酸的酸性比碳酸弱

③漂粉精露置在空气中会变质)

(6) 卤素间的置换反应

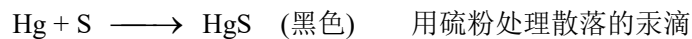
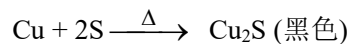
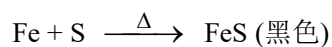


(7) 卤离子的检验 (滴加 AgNO_3 、稀 HNO_3)



二、硫

(1) 硫与金属反应，生成低价金属硫化物

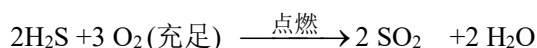
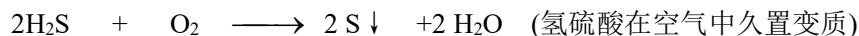


(2) $\text{S} + \text{O}_2 \xrightarrow{\text{点燃}} \text{SO}_2$ (刺激性气味，能使品红溶液褪色，具有漂白性)

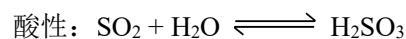
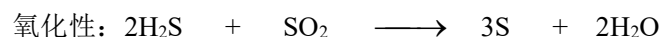
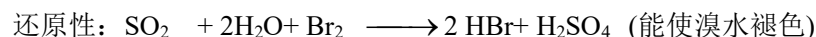
(3) H_2S 弱酸性和还原性

弱酸性：二元弱酸

还原性

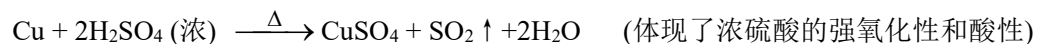
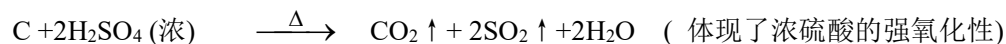


(4) SO_2 氧化性、还原性、酸性、漂白性



SO_2 能漂白品红溶液，但加热后又复色

(5) 浓硫酸的强氧化性

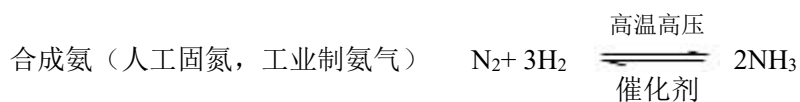
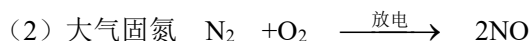


(6) SO_4^{2-} 检验 (先加 HCl 再加 BaCl_2)

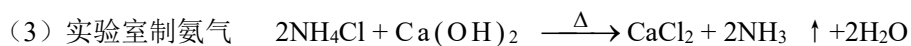


三、氮族元素

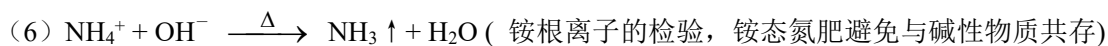
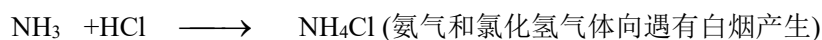
(1) 氮气与金属反应 $3\text{Mg} + \text{N}_2 \xrightarrow{\text{高温}} \text{Mg}_3\text{N}_2$



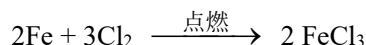
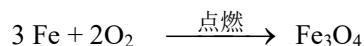
(如何提高反应速率、如何使反应向正反应方向进行)



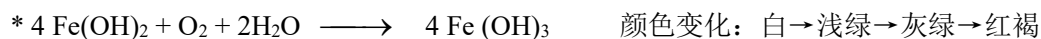
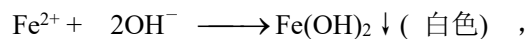
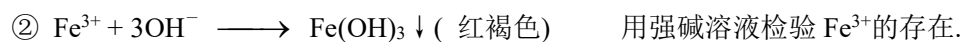
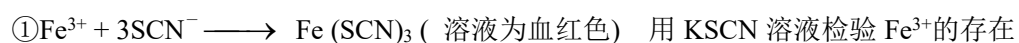
(5) 铵盐受热分解



四、铁和铝



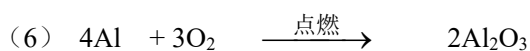
(2) Fe^{2+} 和 Fe^{3+} 鉴别



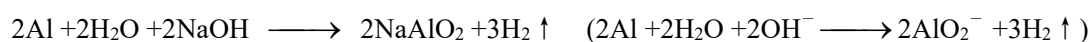
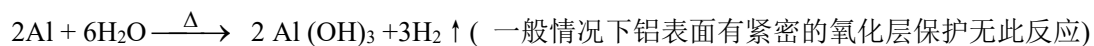
(3) Fe^{3+} 盐作净水剂



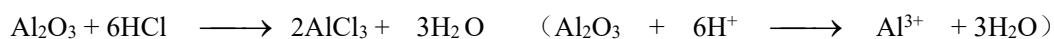
(5) $\text{Fe}_2\text{O}_3 + 2\text{Al} \xrightarrow{\text{高温}} 2\text{Fe} + \text{Al}_2\text{O}_3$ (铝粉和铁的氧化物的混合物称铝热剂, 可以用来焊接铁轨)



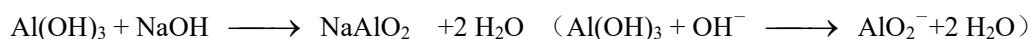
(7) Al + 酸、水、碱 反应



(8) Al_2O_3 的两性

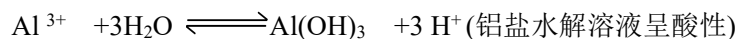


(9) $\text{Al}(\text{OH})_3$ 的两性



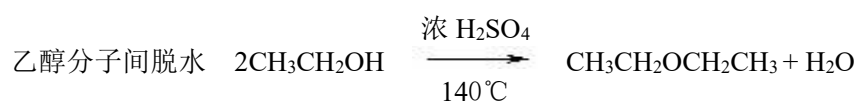
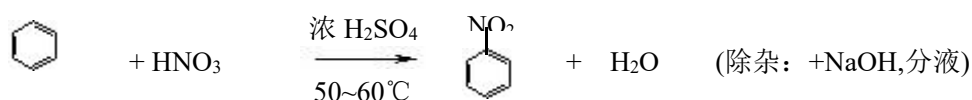
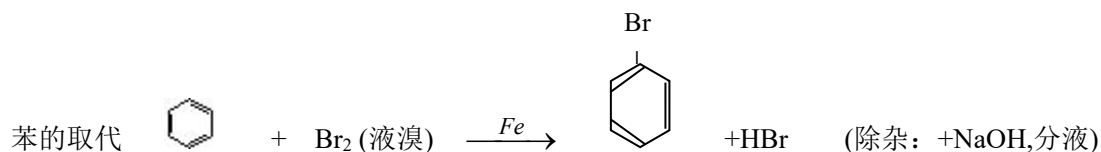
(10) $\text{Al}^{3+} + 3\text{NH}_3 \cdot \text{H}_2\text{O} \longrightarrow 3\text{NH}_4^+ + \text{Al}(\text{OH})_3 \downarrow$ (不溶于弱碱, 制备 $\text{Al}(\text{OH})_3$ 方法)

(11) Al^{3+} 盐作净水剂



五、有机反应

(1) 取代反应

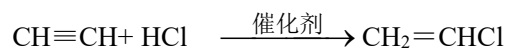
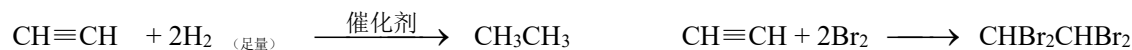


(2) 加成反应:

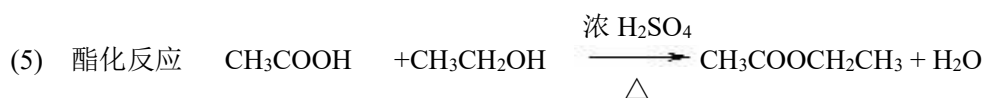
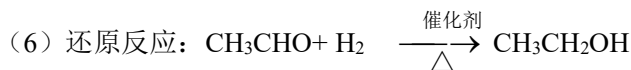
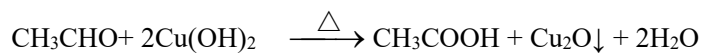
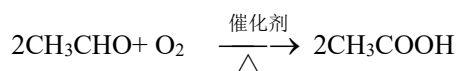
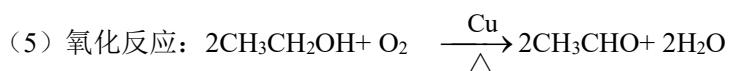
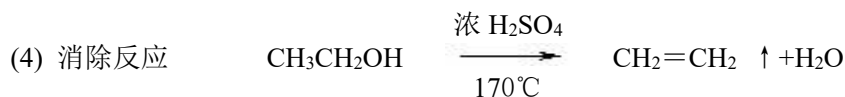
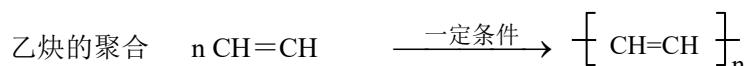
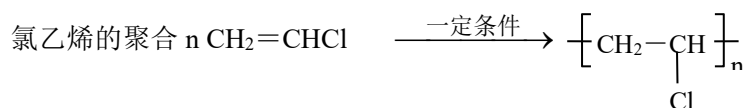
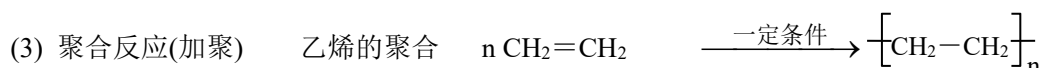
烯烃和氢气、溴水、卤化氢、水的加成:



炔烃和氢气、溴水、卤化氢的加成



苯和氢气的加成



也属于取代反应