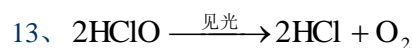
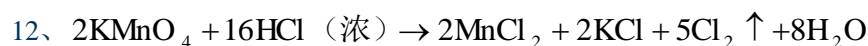
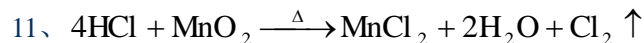
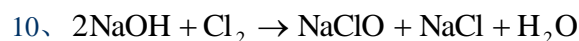
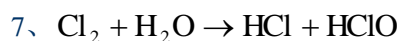
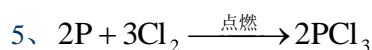
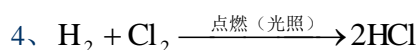
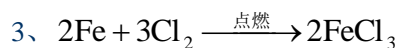
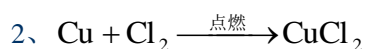
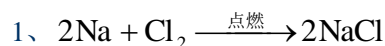
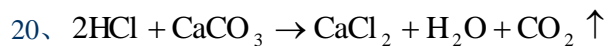
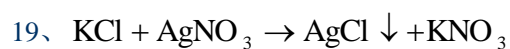
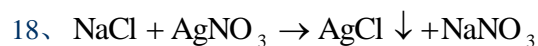
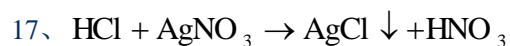
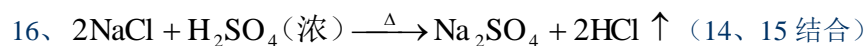
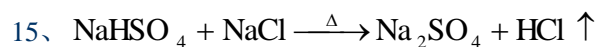
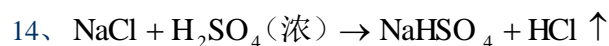


第一章 卤素

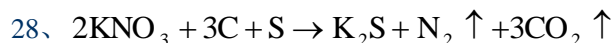
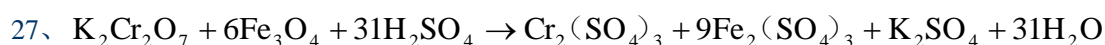
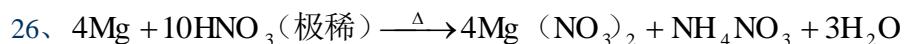
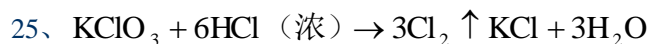
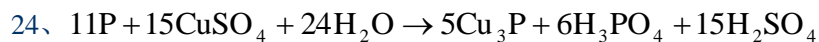
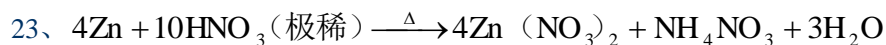
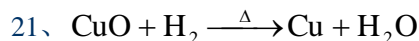
第一节 氯气



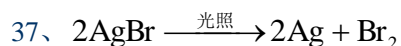
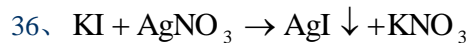
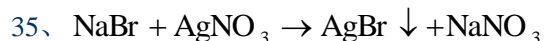
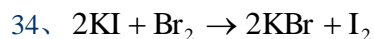
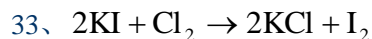
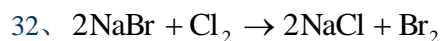
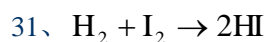
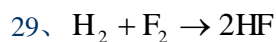
第二节 氯化氢



第三节 氧化还原反应

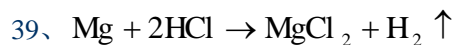
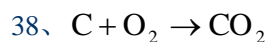


第四节 卤族元素

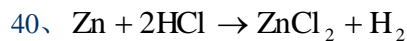


第二章 摩尔 反应热

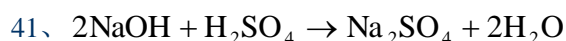
第一节 摩尔



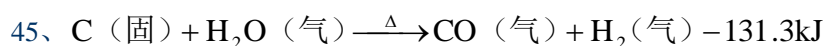
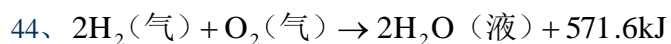
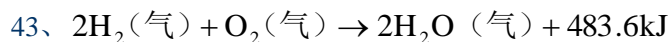
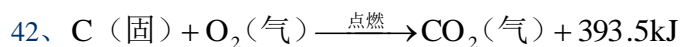
第二节 气体摩尔体积



第三节 物质的量浓度

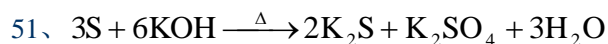
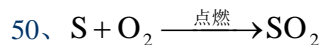
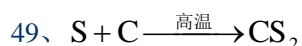
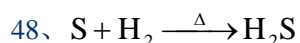
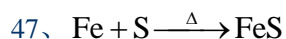
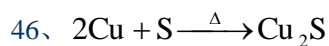


第四节 反应热

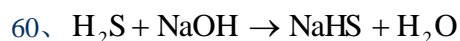
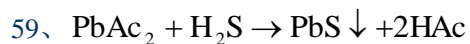
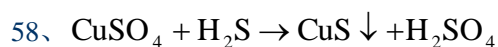
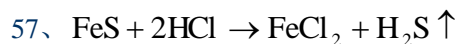
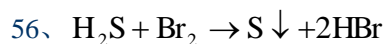
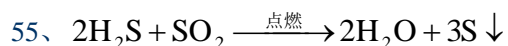
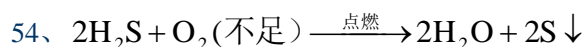
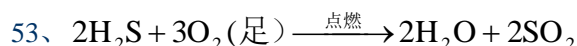
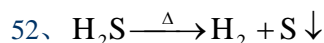


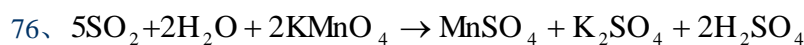
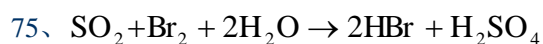
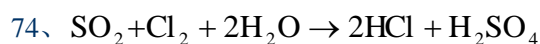
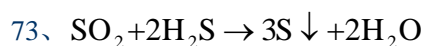
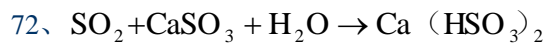
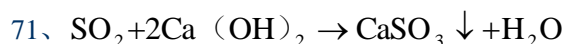
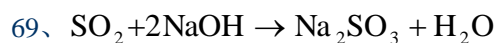
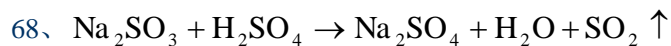
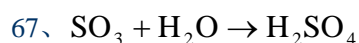
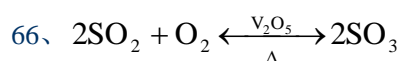
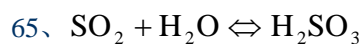
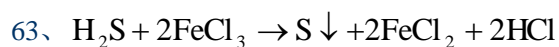
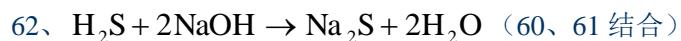
第三章 硫 硫酸

第一节 硫

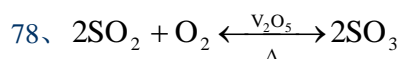
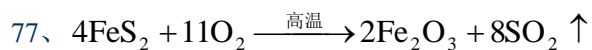


第二节 硫的氢化物和氧化物

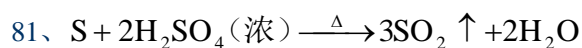
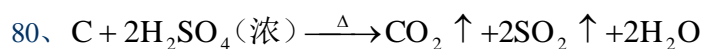


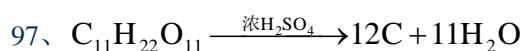
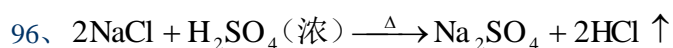
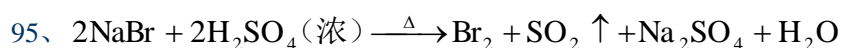
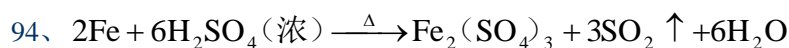
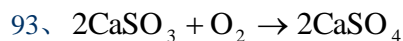
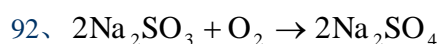
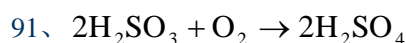
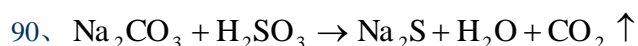
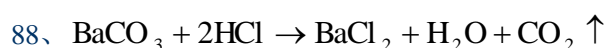
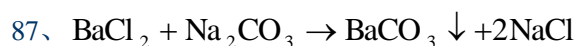
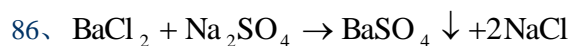
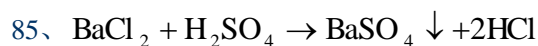
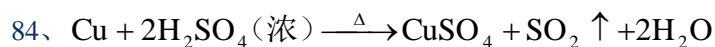
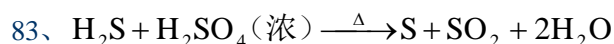
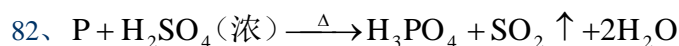


第三节 硫酸的工业制法



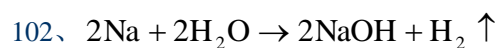
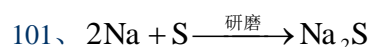
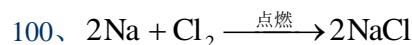
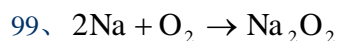
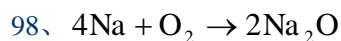
第四节 硫酸 硫酸盐

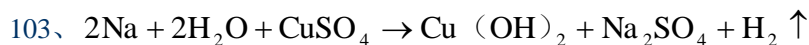




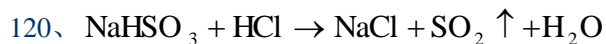
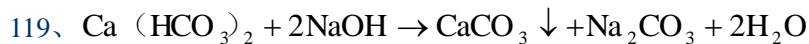
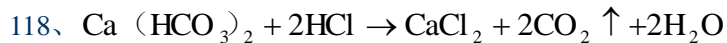
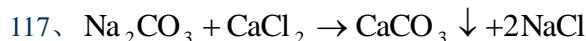
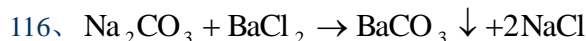
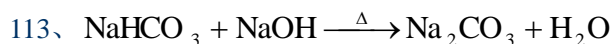
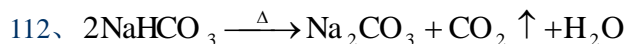
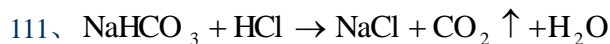
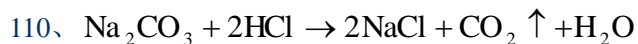
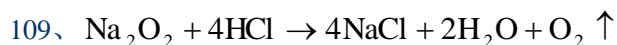
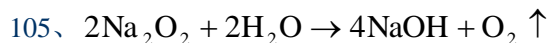
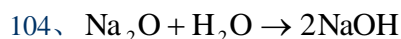
第四章 碱金属

第一节 钠

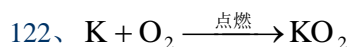
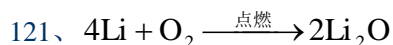


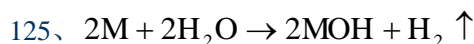
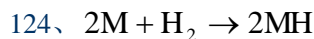


第二节 钠的氧化物



第三节 碱金属元素



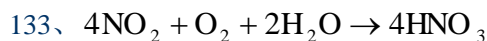
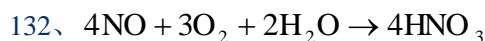
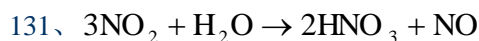
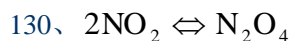
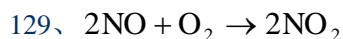
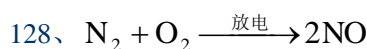
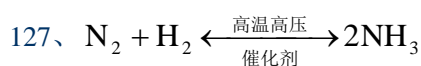
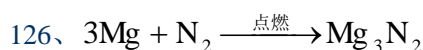


第五章 物质结构 元素周期律

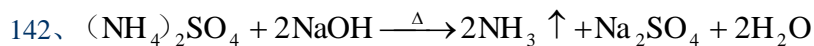
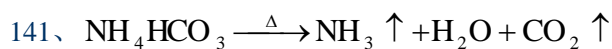
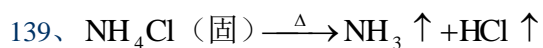
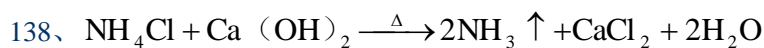
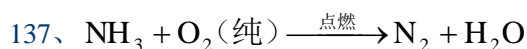
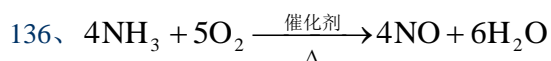
本章内容、性质特殊，所有化学反应方程式均融在其他章节中。

第六章 氮和磷

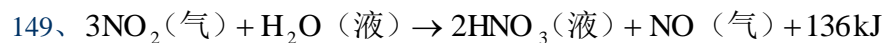
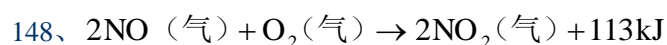
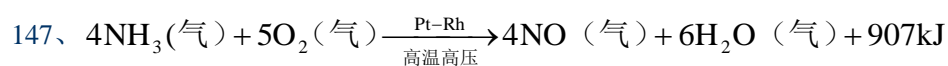
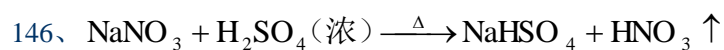
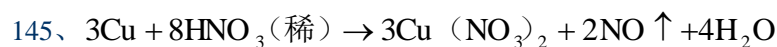
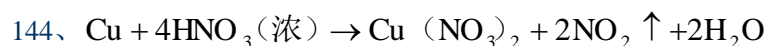
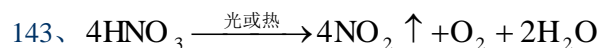
第二节 氮气



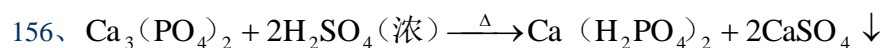
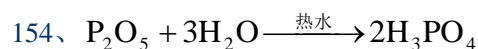
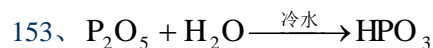
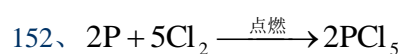
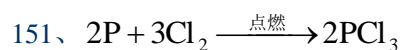
第三节 氨 铵盐



第四节 硝酸



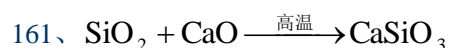
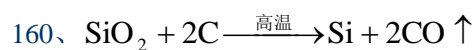
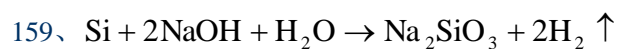
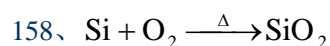
第六节 磷 磷酸

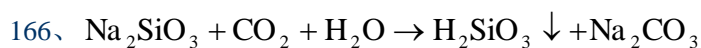
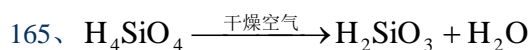
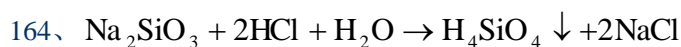


化学 第二册

第一章 硅

第二节 硅及其重要的化合物



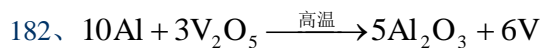
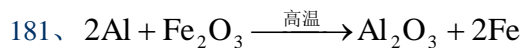
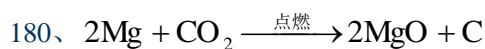
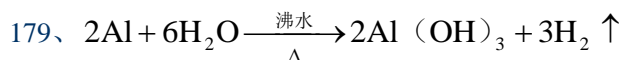
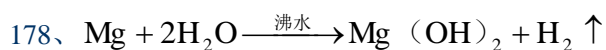
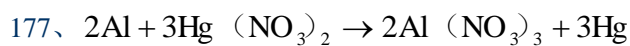
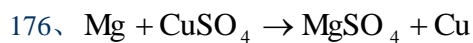
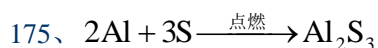
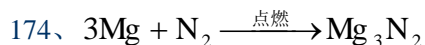
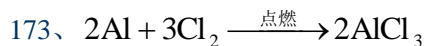
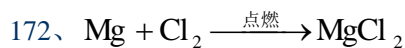
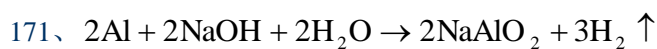
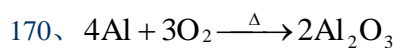
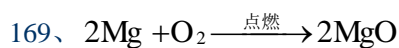


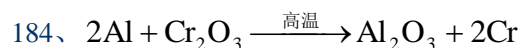
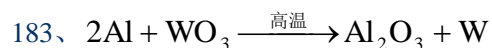
第三节 硅酸盐工业简述



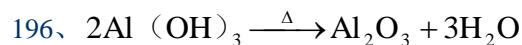
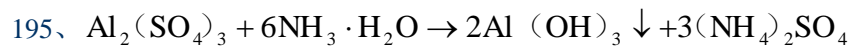
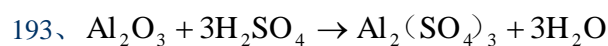
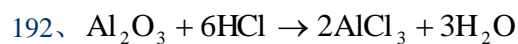
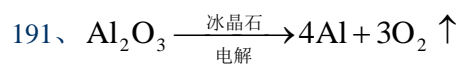
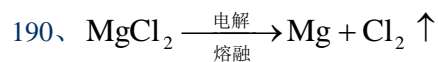
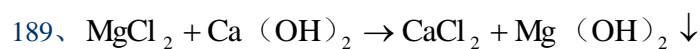
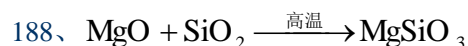
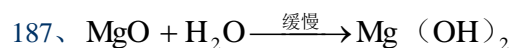
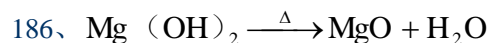
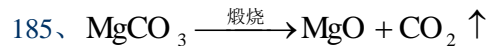
第二章 镁 铝

第二节 镁和铝的性质

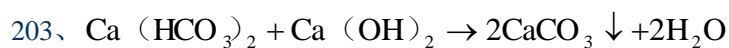
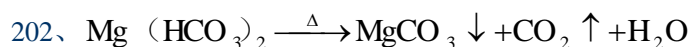
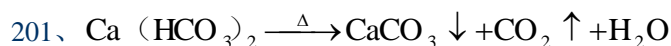
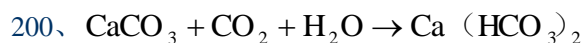


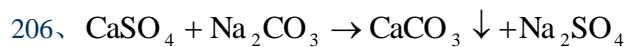
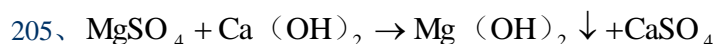
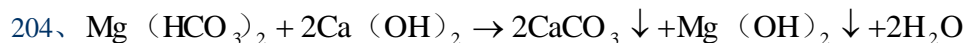


第三节 镁和铝的重要化合物



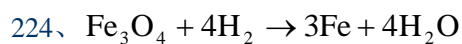
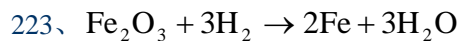
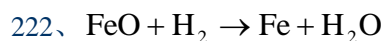
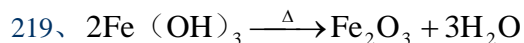
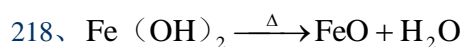
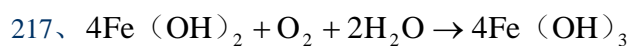
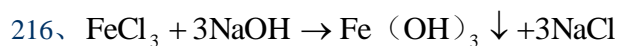
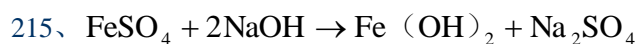
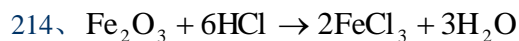
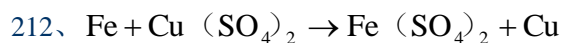
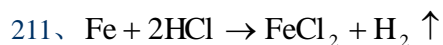
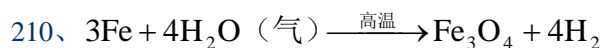
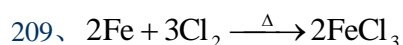
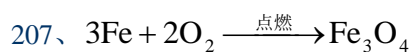
第四节 硬水及其软化

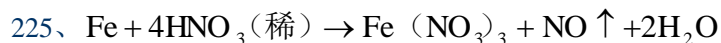




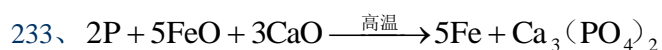
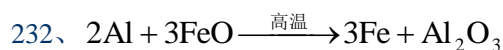
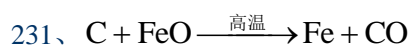
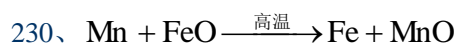
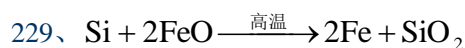
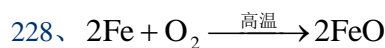
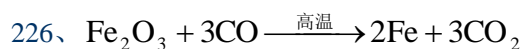
第三章 铁

第一节 铁和铁的化合物



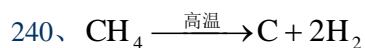
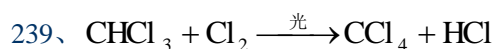
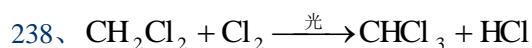
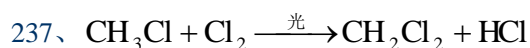
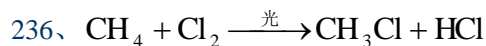
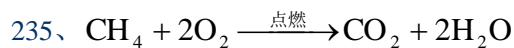
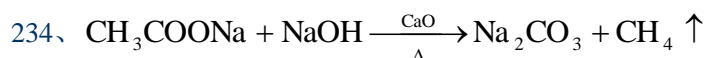


第二节 炼铁和炼钢

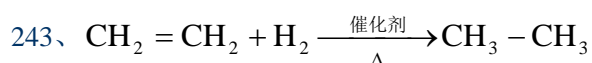
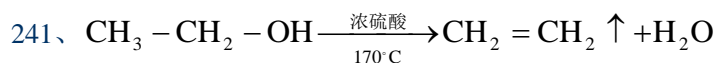


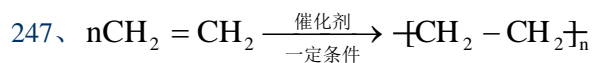
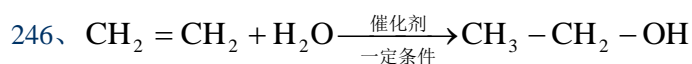
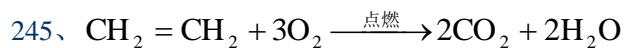
第四章 烃

第二节 甲烷

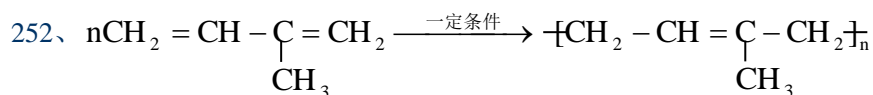
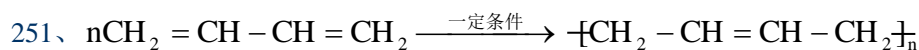
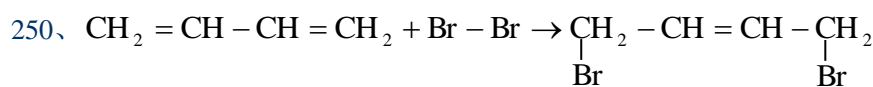
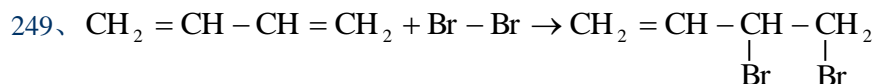
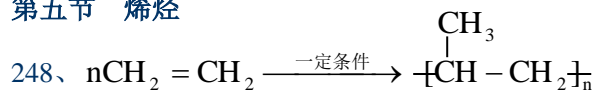


第四节 乙烯

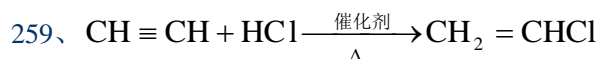
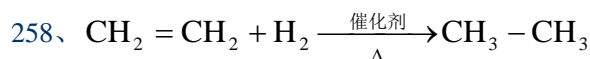
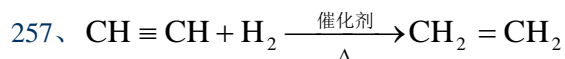
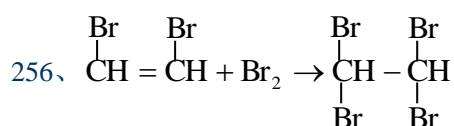
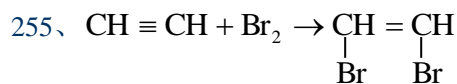
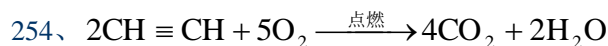
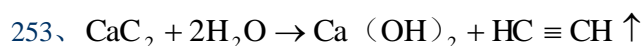




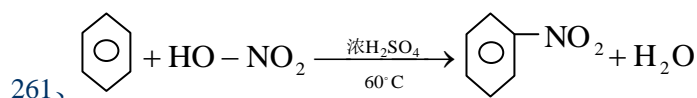
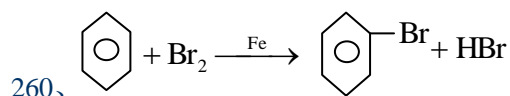
第五节 烯烃

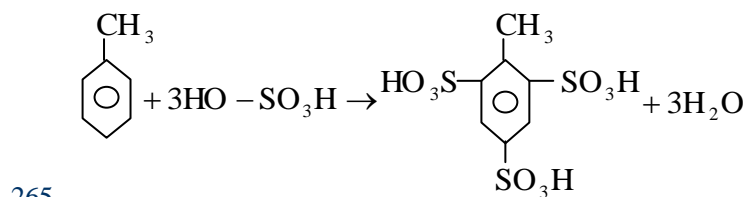
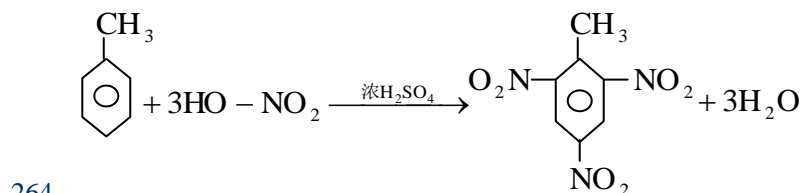
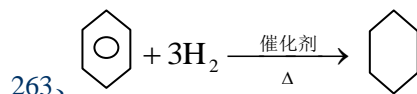
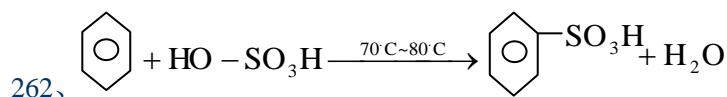


第六节 乙炔

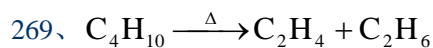
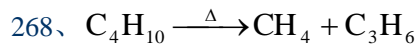
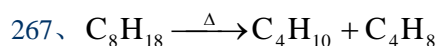
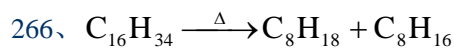


第七节 苯 芳香烃



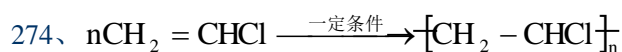
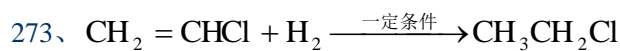
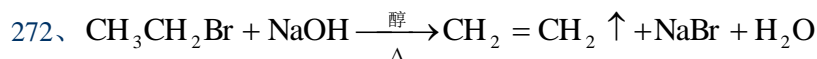
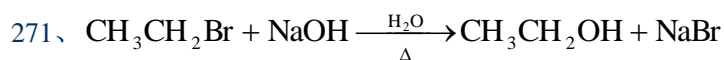
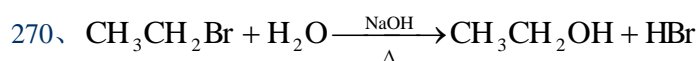


第八节 石油和石油产品概述

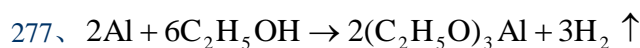
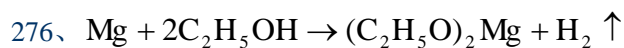
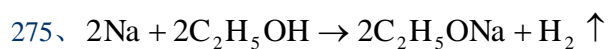


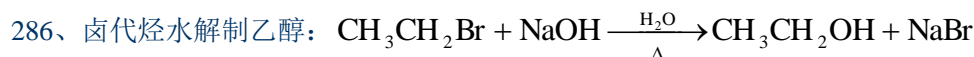
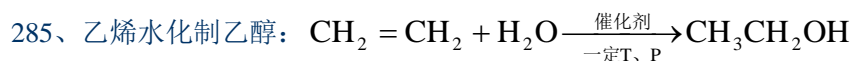
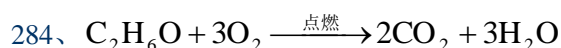
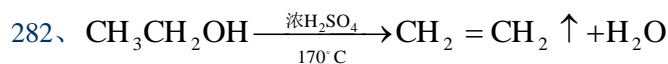
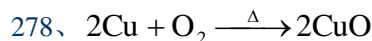
第五章 烃的衍生物

补充课程 卤代烃

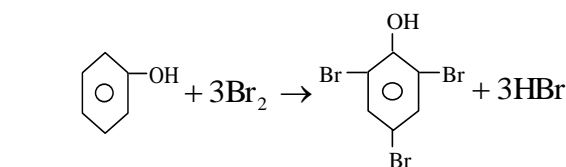


第一节 乙醇

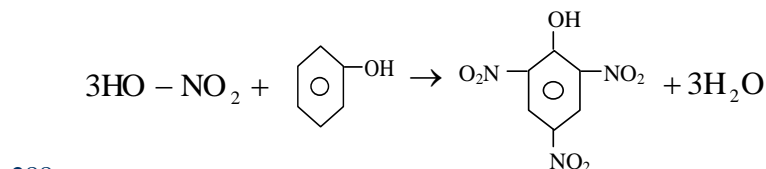




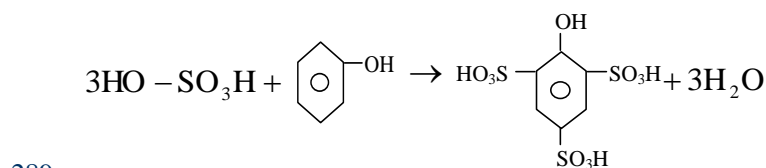
第二节 苯酚



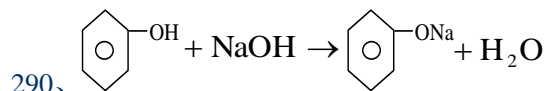
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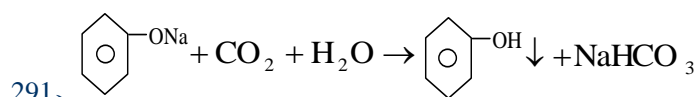
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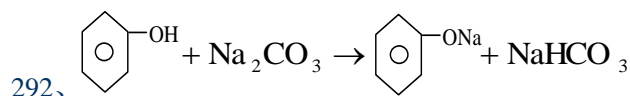
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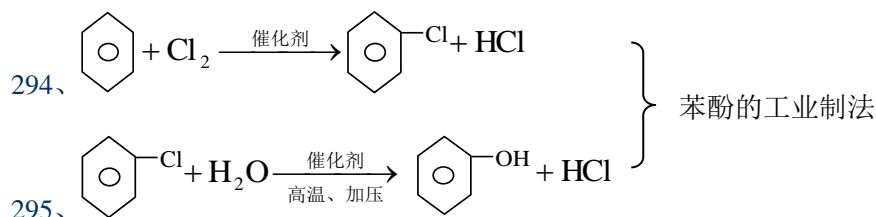
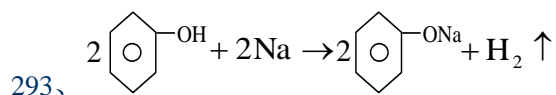
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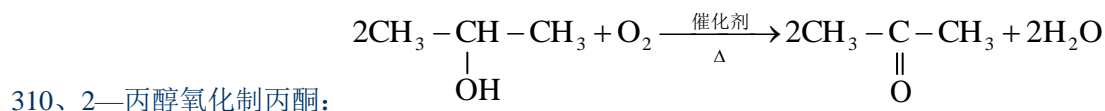
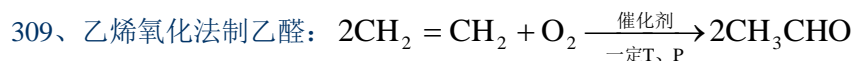
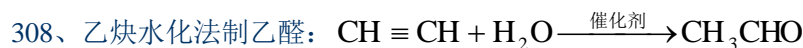
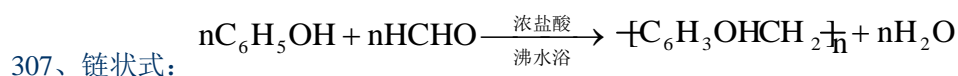
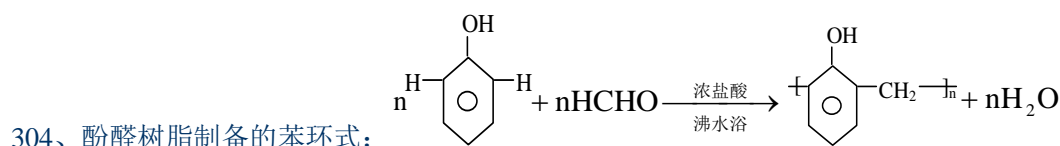
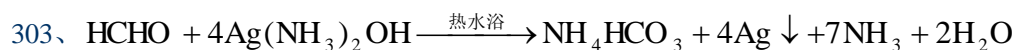
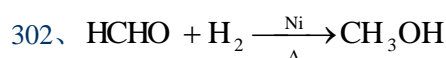
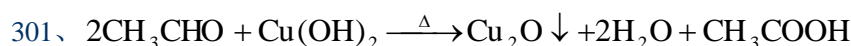
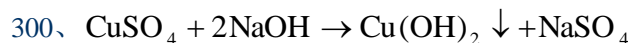
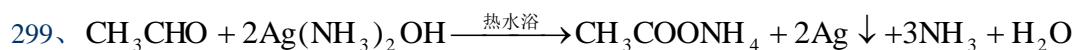
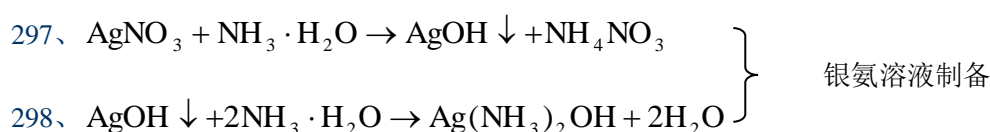
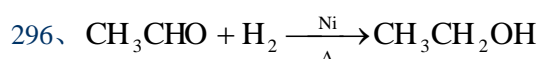
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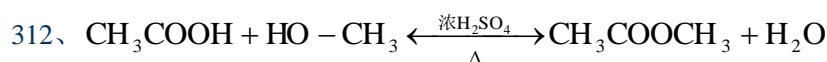
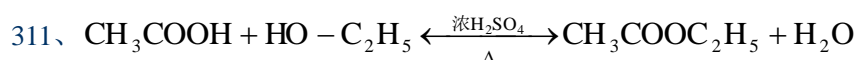
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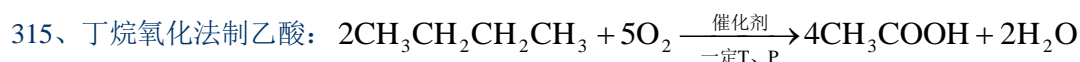
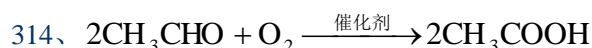
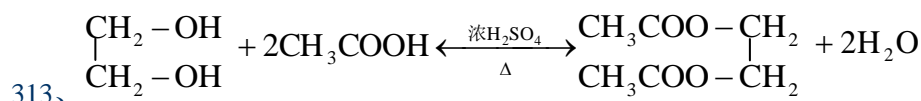


第三节 醛

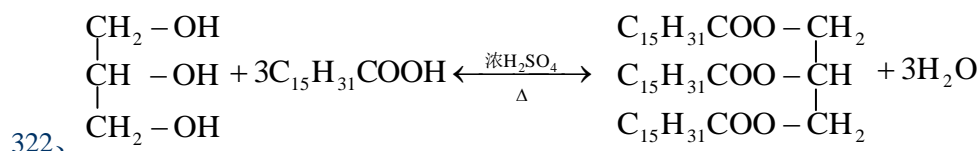
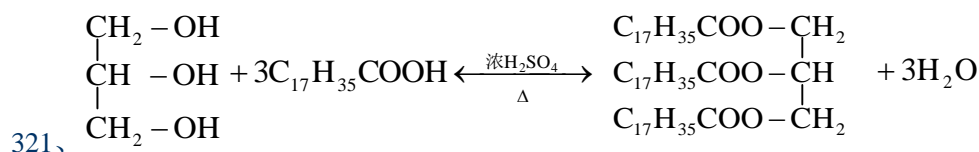
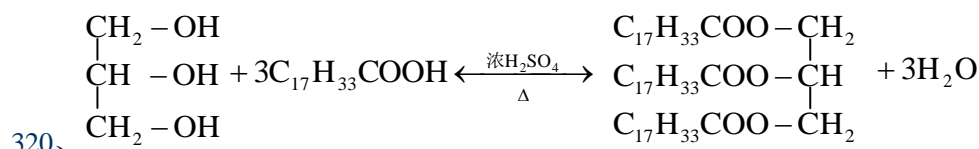
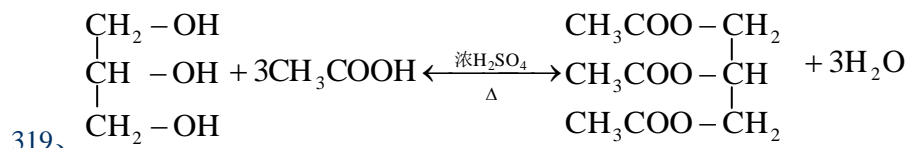
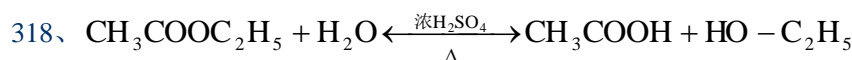
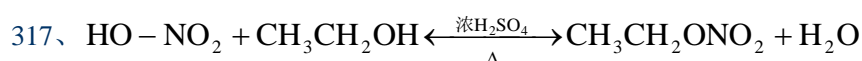
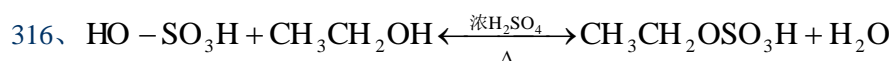


第四节 乙酸

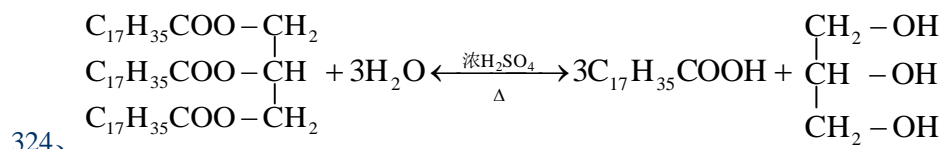
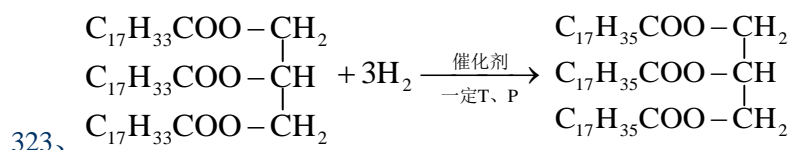




第五节 酯



第六节 油脂

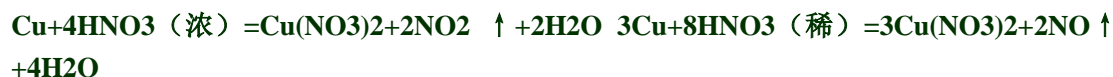


1、铁（少量、过量）与稀硝酸的反应

Fe+4



2、铜与硝酸（浓变稀）反应



3、锌与硫酸（浓变稀）反应



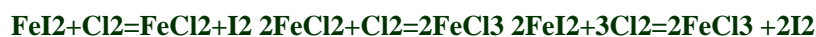
注意：常常结合定量计算考查硫酸的性质。

4、溴化亚铁溶液与氯气（少量、过量）的反应



注意：该反应是离子方程式书写和定量判断产物的热点。

5、碘化亚铁溶液与氯气（少量、过量）的反应



6、碘化亚铁溶液与溴水（少量、过量）的反应



7、硫化钾溶液与碘单质（少量、过量）的反应



8、硫单质（少量、过量）与浓氢氧化钠溶液的反应



9、氯水与亚硫酸钠（少量、过量）溶液的反应



10、溴水与亚硫酸钠（少量、过量）溶液的反应



11、碘水与亚硫酸钠（少量、过量）溶液的反应



12、硫化钠（少量、过量）溶液与氯化铁溶液的反应



13、氢氧化铁与氢碘酸（少量、过量）的反应



14、氢氧化铁胶体与盐酸（少量、过量）的反应



15、硅胶与氢氧化钠（少量、过量）溶液的反应



16、氯化铝溶液中逐滴滴入氢氧化钠（少量、过量）溶液



注意：氯化铝溶液中逐滴滴入氢氧化钠方法因为控制不好氢氧化钠的用量，不能用该方法制备氢氧化铝。

17、偏铝酸钠溶液中逐滴加入盐酸（少量、过量）



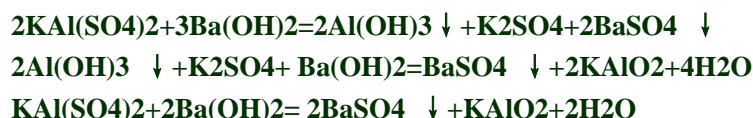
注意：偏铝酸钠溶液中逐滴加入盐酸的方法因为控制不好盐酸的用量，不能用该方法制备氢氧化铝。

18、偏铝酸钠溶液中通入二氧化碳（少量、过量）



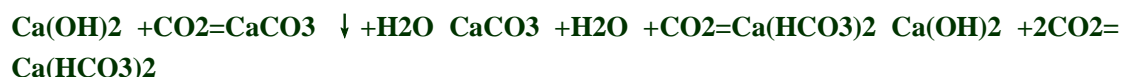
注意：可以用此方法制备氢氧化铝。

19、明矾溶液中逐滴加入氢氧化钡（少量、过量）溶液

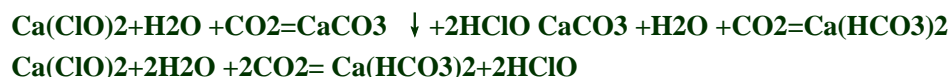


注意：本反应在离子方程式书写、结合图像进行计算方面多有考查。

20、澄清石灰水中通入二氧化碳（少量、过量）



21、漂白粉的水溶液中加入干冰（少量、过量）



注意 1：次氯酸钙溶液通入二氧化碳的现象与澄清石灰水中通入二氧化碳的现象一样，但是对二者的产物进行光照，就会出现不同的结果，次氯酸光照分解反复出氧气的同时自身变成盐酸。盐酸可以溶解碳酸钙、碳酸氢钙，并放出二氧化碳。

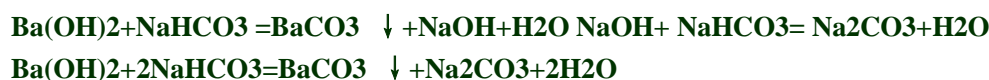
注意 2：对次氯酸钙溶液通入二氧化碳后的产物进行光照是考试的热点。

22、碳酸钠溶液中滴入盐酸（少量、过量）

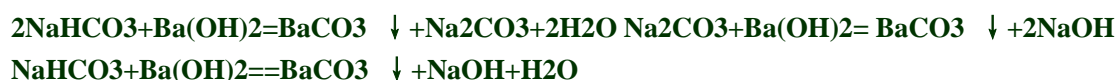


注意：碳酸钠和碳酸氢钠的混合物中，滴入盐酸，首先是碳酸钠先反应生成碳酸氢钠，然后碳酸氢钠再与盐酸反应。

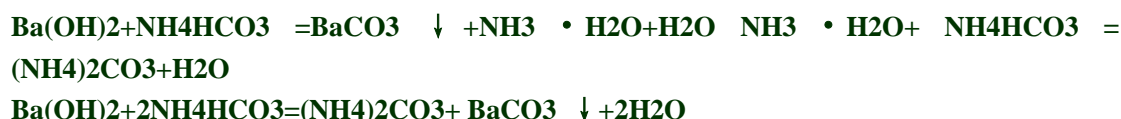
23、氢氧化钡溶液中滴入碳酸氢钠溶液（少量、过量）



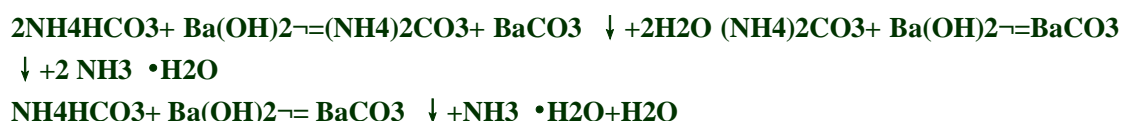
24、碳酸氢钠溶液中滴入氢氧化钡溶液（少量、过量）



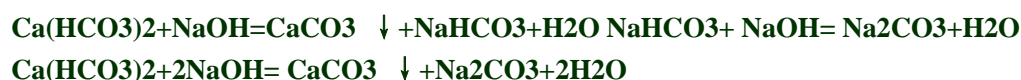
25、氢氧化钡溶液中滴入碳酸氢铵溶液（少量、过量）



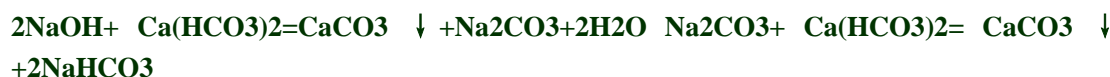
26、碳酸氢铵溶液中滴入氢氧化钡溶液（少量、过量）



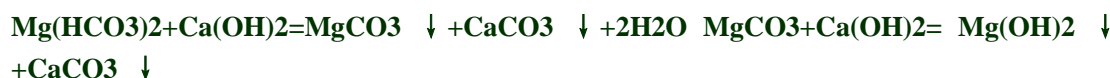
27、碳酸氢钙溶液滴入氢氧化钠溶液（少量、过量）



28、氢氧化钠溶液中滴入碳酸氢钙溶液（少量、过量）



29、碳酸氢镁溶液中滴入澄清石灰水（少量、过量）

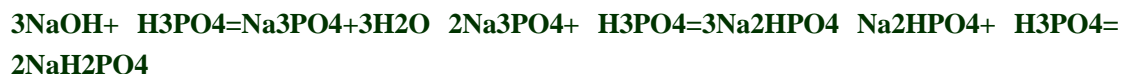




30、磷酸溶液中滴入氢氧化钠溶液（少量、过量）



31、氢氧化钠溶液中滴入磷酸溶液（少量、过量）



32、磷酸溶液中滴入澄清石灰水（少量、过量）



注意：磷酸溶液中滴入澄清石灰水，量不同产物不同。

① <0.5 时，没沉淀，产物是 $\text{Ca}(\text{H}_2\text{PO}_4)_2$

② $0.5 < 1$ 时，有沉淀，产物是 $\text{Ca}(\text{H}_2\text{PO}_4)_2$ 和 CaHPO_4

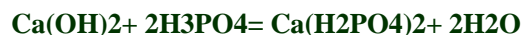
③ $=1$ 时，有沉淀，产物是 CaHPO_4

④ $1 < 1.5$ 时，有沉淀，产物是 CaHPO_4

和 $\text{Ca}_3(\text{PO}_4)_2$

⑤ $=1.5$ 时，有沉淀，产物是 $\text{Ca}_3(\text{PO}_4)_2$

33、澄清石灰水中滴入磷酸溶液（少量、过量）



注意：澄清石灰水中滴入少量磷酸会产生沉淀，随着磷酸的滴入会发生沉淀的转移直至沉淀的消失，用互滴法可以鉴别磷酸和澄清石灰水。

34、氢硫酸溶液中滴入氢氧化钠溶液（少量、过量）



35、氢氧化钠溶液通入硫化氢气体（少量、过量）



36、澄清石灰水中通入二氧化硫（少量、过量）



注意：二氧化碳与二氧化硫都可以使澄清石灰水变浑浊，气体过量后都澄清，因此不能说使澄清石灰水变浑浊的一定是二氧化碳。

37、亚硫酸溶液中滴入澄清石灰水（少量、过量）



38、氢氧化钡溶液中滴入硫酸氢钠溶液（少量、过量）



39、硫酸氢钠溶液中滴入氢氧化钡溶液（少量、过量）



注意：此方程式的考查是高考的热点，滴加溶液的顺序不同，导致量就不同，产物就不同。

40、亚硫酸钠溶液滴入盐酸（少量、过量）**41、氢氧化钠溶液中逐滴滴入氯化铝溶液（少量、过量）**

注意：氢氧化钠溶液中滴入少量的氯化铝溶液不会产生沉淀，氢氧化钠溶液中滴入过量氯化铝溶液的方法也可以制备氢氧化铝沉淀。

42、盐酸溶液中逐滴滴入偏铝酸钠溶液（少量、过量）

注意：盐酸中滴入少量的偏铝酸钠不会产生沉淀，盐酸中滴入过量偏铝酸钠的方法也可以制备氢氧化铝沉淀。

43、硝酸银溶液中逐滴滴入氨水（少量、过量）

注意：银氨溶液的制备时，过量的氨水恰好溶解沉淀为止；另外银氨溶液要现用现配，放置时间久了，转化成 Ag_3N 会有危险，如果有剩余，用硝酸中和掉，消除危险。

44、硫酸铜溶液中逐滴滴入氨水（少量、过量）