Complete and balance the following reactions. Indicate the state (solid, liquid or gas) of the products when known. If heat is produced as a product include it. If no reaction occurs write NR in the answer blank.

1. \( \text{Al(NO}_3\text{)}_3(aq) + \text{Ca}_3(\text{PO}_4\text{)}_2(aq) \rightarrow \)

2. \( \text{Ni}(s) + \text{Pb(NO}_3\text{)}_3(aq) \rightarrow \)

3. \( + \rightarrow \text{Mg(OH)}_2 \)

4. \( 2\text{HgO(s)} \rightarrow + \)

5. \( \text{PbCl}_2(aq) + \text{(NH}_4\text{)}_2\text{CO}_3(aq) \rightarrow \)

6. \( \text{Fe(s)} + \text{H}_2\text{SO}_4(aq) \rightarrow \)

7. \( \text{H}_3\text{PO}_4(aq) + \text{KOH(aq)} \rightarrow \)

8. \( \text{Ag(s)} + \text{HCl(aq)} \rightarrow \)

9. \( \text{Fe(s)} + \text{ZnCl}_2(aq) \rightarrow \)

10. \( \text{FeCl}_2(aq) + \text{AgNO}_3(aq) \rightarrow \)

11. \( \text{(NH}_4\text{)}_2\text{SO}_4(aq) + \text{NiCl}_2(aq) \rightarrow \)

12. \( \text{C}_2\text{H}_6(l) + \text{O}_2(g) \rightarrow \)

13. \( \text{NH}_4\text{Br(aq)} + \text{NaOH(aq)} \rightarrow \)
14. \( \text{Cl}_2(g) + \text{NaBr}(aq) \rightarrow \)
15. \( \text{Na}_2\text{CO}_3(aq) + \text{HCl}(aq) \rightarrow \)
16. \( \text{CuSO}_4 \cdot 5\text{H}_2\text{O}(s) \xrightarrow{\Delta} \)
17. \( \text{HNO}_3(aq) + \text{Mg(OH)}_2(aq) \rightarrow \)
18. \( \text{MgSO}_4 \cdot 3\text{H}_2\text{O}(s) \xrightarrow{\Delta} \)
19. \( \text{Cl}_2(g) + \text{NaI}(aq) \rightarrow \)
20. \( \text{NH}_4\text{Br}(aq) + \text{NaOH}(aq) \rightarrow \)
21. \( \text{C}_3\text{H}_8(l) + \text{O}_2(g) \rightarrow \)
22. \( \text{FeCl}_3(aq) + \text{SnSO}_4(aq) \rightarrow \)
23. \( \text{Mg}(s) + \text{ZnCl}_2(aq) \rightarrow \)
24. \( \text{Hg}(s) + \text{HCl}(aq) \rightarrow \)
25. \( \text{H}_2\text{SO}_3(\text{sl aq}) \rightarrow \)