Writing ionic equations

# Write balanced ionic equations for the reactions that take place when the following solutions are mixed. Include state symbols in your equations.

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| --- | --- |
| **1** | Copper chloride solution is mixed with potassium hydroxide solution. |
|  | Cu2+(aq) + 2OH-(aq) Cu(OH)2(s) |
| **2** | 2 mL of calcium nitrate solution is added to 2 mL of zinc sulfate solution. |
|  | Ca2+(aq) + SO42-(aq) CaSO4(s) |
| **3** | A few drops of sodium carbonate solution is added to 5 mL of magnesium chloride solution. |
|  | Mg2+(aq) + CO32-(aq) MgCO3(s) |
| **4** | A little potassium iodide solution is poured into a beaker containing lead nitrate solution. |
|  | Pb2+(aq) + 2I-(aq) PbI2(s) |
| **5** | Ammonia solution is added to a precipitate of zinc hydroxide. |
|  | Zn2+(aq) + NH3(aq) [Zn(NH3)4]2+(aq) |
| **6** | Limewater (calcium hydroxide solution) is added to aluminium chloride solution. |
|  | Al3+(aq) + 3OH-(aq) Al(OH)3(s) |
| **7** | Excess sodium hydroxide solution is added to a precipitate of lead hydroxide. |
|  | Pb(OH)2(s) + 2OH-(aq) [Pb(OH)4]2-(aq) |
| **8** | Iron(II) sulfate solution is added to potassium carbonate solution. |
|  | Fe2+(aq) + CO32-(aq) FeCO3(s) |
| **9** | A few drops of copper chloride solution are added to silver nitrate solution. |
|  | Ag+(aq) + Cl-(aq) AgCl(s) |
| **10** | 2 mL of ammonium hydroxide solution is added to 2 mL of iron(III) chloride solution. |
|  | Pb2+(aq) + 2OH-(aq) Pb(OH)2(s) |
| **11** | Ammonia solution is added to a precipitate of copper hydroxide. |
|  | Cu(OH)2(s) + 4NH3(aq) [Cu(NH3)4]2+(aq) |
| **12** | A few drops of lead nitrate solution are added to iron(II) sulfate solution. |

Pb2+(aq) + SO42-(aq) PbSO4(s)