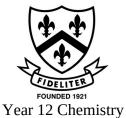


Year 12 Chemistry Mastery Test: Distinguish between

1. For each of the following pairs of substances, describe a chemical test (not the use of indicators!) that will distinguish between them. State the distinguishing observations; if there is no visible reaction write "nvr". If there is a chemical reaction, write the appropriate equation.

| | What would you do | What would you observe | Chemical equation where appropriate |
|-------------------------|----------------------|------------------------|-------------------------------------|
| | uo | With Ba | where арргориас |
| Solid Ba and | | | |
| Solid Mg | | With Mg | |
| | | | |
| | | | |
| | | | |
| | | With MgO | |
| Solid MgO | | | |
| and | | | |
| Solid MgCO ₃ | | With MgCO ₃ | |
| | | With MgCO ₃ | |
| | | | |
| | | | |
| | | | |

(6 marks)



Mastery Test: Distinguish between - SOLUTIONS

2. For each of the following pairs of substances, describe a chemical test (not the use of indicators!) that will distinguish between them. State the distinguishing observations; if there is no visible reaction write "nvr". If there is a chemical reaction, write the appropriate equation.

| | What would you do | What would you observe | Chemical equation where appropriate |
|----------------------------|---|---|---|
| Solid Ba and | Add HCl to both and then add Na ₂ SO ₄ solution | With Ba A colourless odourless gas would be formed Then a white ppt | $Ba + 2H^{+} \rightarrow H_{2} + Ba^{2+}$ $Ba^{2+} + SO_{4}^{2-} \rightarrow BaSO_{4}(s)$ |
| Solid Mg | | With Mg A colourless odourless gas formed then no further change | $Mg + 2H^+ \rightarrow H_2 + Mg^{2+}$ |
| Solid MgO and | Add a solution of dilute hydrochloric acid | With MgO The white solid would dissolve | $MgO_{(s)} + 2H^{+}_{(aq)} \rightarrow H_2O_{(l)} + Mg^{2+}_{(aq)}$ |
| Solid MgCO ₃ | | With MgCO ₃ A colourless odourless gas would be formed | $MgCO_{3(s)} + 2H^{+}_{(aq)} \rightarrow CO_{2(g)} + H_2O_{(l)} + Mg^{2+}_{(aq)}$ |

(6 marks)