

Section 5.2 Salts

Check Your Understanding ANSWER KEY

Check Your Understanding Answers

Checking Concepts

1. A salt is the ionic compound formed from the neutralization of a base with an acid.
2. Neutralization is a chemical reaction in which an acid and a base are combined, which then neutralize each other.

3. Base
4. Acid
5. Cesium
6. Sodium, zinc, copper, gold
7. Calcium carbonate is a base (even though it has no OH in the formula), and it is used to neutralize acid rain in the lake water.
8. (a) Hydrogen
(b) Carbon dioxide

Understanding Key Ideas

9. (a) Acid
(b) Base
(c) Base
(d) None of these
(e) Salt
(f) Acid
(g) Salt
10. (a) $\text{HF} + \text{NaOH} \rightarrow \text{NaF} + \text{H}_2\text{O}$
(b) $\text{H}_3\text{PO}_4 + 3\text{KOH} \rightarrow \text{K}_3\text{PO}_4 + 3\text{H}_2\text{O}$
(c) $\text{H}_2\text{SO}_4 + \text{Ca}(\text{OH})_2 \rightarrow \text{CaSO}_4 + 2\text{H}_2\text{O}$
(d) $\text{CH}_3\text{COOH} + \text{NaOH} \rightarrow \text{NaCH}_3\text{COO} + \text{H}_2\text{O}$
(e) $3\text{H}_2\text{CO}_3 + 2\text{Al}(\text{OH})_3 \rightarrow \text{Al}_2(\text{CO}_3)_3 + 6\text{H}_2\text{O}$
11. Blue. Magnesium burns to form magnesium oxide, and metal oxides form bases in water, making the resulting solution basic. Litmus is blue in basic solutions.
12. Yellow. Sulfur burns to form sulfur oxides, and non-metal oxides form acids in water, making the resulting solution acidic. Bromothymol blue turns yellow in acidic solutions.

Pause and Reflect Answer

Students' answers may include some of these points.

- The environmental concern from smelting sulphur containing ores is acid precipitation due to the production of sulfur oxides that mix with atmospheric water to produce sulfuric and sulfurous acids.
- Sulfur capture during the smelting process will prevent the escape of sulfur oxides into the environment. Removing sulfur oxides from the smelting exhaust is likely the most practical approach, though students would not be expected to know this.