

Word Equations Involving Acids - Identification of Salts.

KEY POINT: When acids react with substances _____ are produced. (Anagram of LSTAS)

A salt is an ionic compound formed by the action of an _____ on a substance. (Anagram of CIDA)

Salts are composed of _____ and negative ions. Eg. NaCl , Na^+ and Cl^- and CuSO_4 , Cu^{2+} and SO_4^{2-}

Table: Common Acids and their Salts

Acid	Formula	Salt
Hydrochloric acid		chloride
Sulfuric acid		sulfate
Nitric acid		nitrate
Acetic acid (vinegar)	CH_3COOH	acetate

Use the table above to identify the salts produced for the following reactions.

HINT: Salts are named metal first, so look for the metal. The non-metal part comes from the acid.

Chemical Reaction 1: Acid + Alkali → Salt + Water

- Hydrochloric acid + sodium hydroxide → _____ + water
- Sulfuric acid + sodium hydroxide → _____ + water
- Nitric acid + sodium hydroxide → _____ + water
- Acetic acid + potassium hydroxide → _____ + water
- Potassium hydroxide + nitric acid → _____ + water

Chemical Reaction 2: Acid + Active metal → Salt + Hydrogen gas

- Hydrochloric acid + magnesium → _____ + hydrogen
- Sulfuric acid + magnesium → _____ + hydrogen
- Magnesium + acetic acid → _____ + hydrogen
- Zinc + hydrochloric acid → _____ + hydrogen
- Sulfuric acid + Iron → _____ + hydrogen
- Nickel + acetic acid → _____ + hydrogen

Chemical Reaction 3: Acid + Metal carbonate → Salt + Water + Carbon dioxide

- Hydrochloric acid + sodium carbonate → _____ + water + carbon dioxide
- Hydrochloric acid + copper carbonate → _____ + water + carbon dioxide
- Zinc carbonate + sulfuric acid → _____ + water + carbon dioxide
- Acetic acid + sodium carbonate → _____ + water + carbon dioxide
- Copper carbonate + nitric acid → _____ + water + carbon dioxide

Word Equations Involving Acids - Identification of Salts - ANSWERS

KEY POINT: When acids react with substances *salts* are produced. (Anagram of LSTAS)

A salt is an ionic compound formed by the action of an *acid* on a substance. (Anagram of CIDA)

Salts are composed of *positive* and negative ions. Eg. NaCl , Na^+ and Cl^- and CuSO_4 , Cu^{2+} and SO_4^{2-}

Table: Common Acids and their Salts

Acid	Formula	Salt
Hydrochloric acid	HCl	chloride
Sulfuric acid	H_2SO_4	sulfate
Nitric acid	HNO_3	nitrate
Acetic acid (vinegar)	CH_3COOH	acetate

Use the table above to identify the salts produced for the following reactions.

HINT: Salts are named metal first, so look for the metal. The non-metal part comes from the acid.

Chemical Reaction 1: Acid + Alkali \rightarrow Salt + Water

- Hydrochloric acid + sodium hydroxide \rightarrow *sodium chloride* + water
- Sulfuric acid + sodium hydroxide \rightarrow *sodium sulfate* + water
- Nitric acid + sodium hydroxide \rightarrow *sodium nitrate* + water
- Acetic acid + potassium hydroxide \rightarrow *potassium acetate* + water
- Potassium hydroxide + nitric acid \rightarrow *potassium nitrate* + water

Chemical Reaction 2: Acid + Active metal \rightarrow Salt + Hydrogen gas

- Hydrochloric acid + magnesium \rightarrow *magnesium chloride* + hydrogen
- Sulfuric acid + magnesium \rightarrow *magnesium sulfate* + hydrogen
- Magnesium + acetic acid \rightarrow *magnesium acetate* + hydrogen
- Zinc + hydrochloric acid \rightarrow *zinc chloride* + hydrogen
- Sulfuric acid + Iron \rightarrow *iron sulfate* + hydrogen
- Nickel + acetic acid \rightarrow *nickel acetate* + hydrogen

Chemical Reaction 3: Acid + Metal carbonate \rightarrow Salt + Water + Carbon dioxide

- Hydrochloric acid + sodium carbonate \rightarrow *sodium chloride* + water + carbon dioxide
- Hydrochloric acid + copper carbonate \rightarrow *copper chloride* + water + carbon dioxide
- Zinc carbonate + sulfuric acid \rightarrow *zinc sulfate* + water + carbon dioxide
- Acetic acid + sodium carbonate \rightarrow *sodium acetate* + water + carbon dioxide
- Copper carbonate + nitric acid \rightarrow *copper nitrate* + water + carbon dioxide