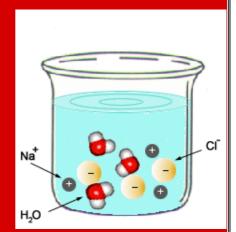
WRITE THIS: Neutralization



objectives

Review naming acids and bases.

Recognize neutralization reactions

Review law of conservation of mass:

predicting products and balancing reactions

Demos:

cabbage juice ---neutralization reaction

pH probe ---

MOM demo

Review

What are the rules for naming binary acids?

What are the rules for naming oxyacids?

Name these acids:

 H_2S

H₂SO₄

H₂SO₃

Name these bases: NaOH

AI(OH)₃

Write these formulas

perchloric acid

chloric acid

hydrochloric acid

chlorous acid

mr. glanes

Which reactions are double replacement? Why?

- 1) $3Fe(OH)_2 + 2H_3PO_4 \rightarrow Fe_3(PO_4)_2 + 6HOH$
- 2) $Pb(NO_3)_2 + 2KI \rightarrow PbI_2 + 2KNO_3$
- 3) $2NH_4OH(aq) + H_2S(aq) \rightarrow (NH_4)_2S(aq) + 2H_2O(1)$
- 4) $2 \text{ HCl} + \text{Zn} \rightarrow \text{ZnCl}_2 + \text{H}_2$

Which reactions are neutralization of acid and base?

How do you know?

Neutralization reactions

- 1. are a type of double replacement reaction
- 2. reactants must be ACID and BASE

What are the products?

answers:

double replacement reactions: #1,2,3

neutralization reactions: #1 and 3

Neutralization reactions

- 1. are a type of double replacement reaction
- 2. reactants must be ACID and BASE
- 3. the products are WATER and SALT.

(an ionic compound)



another example:

$$Ca(OH)_2 + H_2SO_4 \longrightarrow 2H_2O + CaSO_4$$

Write the reactant formulas, then predict the products and balance

Zinc hydroxide and sulfuric acid \longrightarrow

potassium hydroxide + chlorous acid →

carbonic acid and strontium hydroxide ->

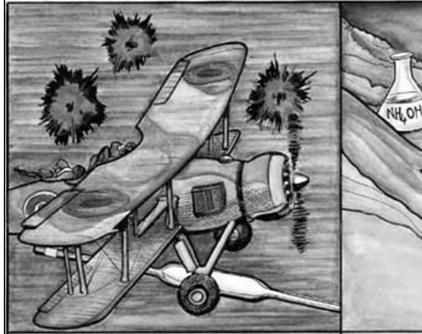
Answers:

$$Zn(OH)_2 + H_2SO_4 \rightarrow ZnSO_4 + 2HOH(I)$$

$$KOH + HCIO_2 \rightarrow KCIO_2(aq) + HOH(I)$$

$$H_2CO_3 + Sr(OH)_2 + \rightarrow SrCO_3 + 2HOH(I)$$

Neutralization



DESPITE THE HEAVY FLAK, MGALISTER'S AIM WAS TRUE, AND HIS CAREFULLY MEASURED ALIQUOT OF HYDROCHLORIC ACID FOUND ITS MARK DEEP IN THE ENEMY'S RESERVOIR OF SODIUM HYDROXIDE



M°ALISTER GRINNED WRYLY: FINALLY, ONE OF THE ENEMY'S STRONGEST BASES HAD BEEN COMPLETELY NEUTRALISED.

more practice

iron(II) hydroxide + phosphoric acid →

ammonium hydroxide+ hydrosulfuric acid→

answers:

 $3Fe(OH)_2 + 2H_3PO_4 \rightarrow Fe_3(PO_4)_2 + 6HOH(I)$

 $2NH_4OH + H_2S \rightarrow /(NH_4)_2S + 2HOH(I)$

II. For each of the following salts, tell which acid and based formed it.

| Salt | Acid | Base |
|--|------|------|
| $Zn(NO_3)_2$ | | |
| Al(ClO) ₃ | | |
| NaCl | | |
| $Ca_3(PO_4)_2$ | | |
| NH ₄ C ₂ H ₃ O ₂ | | |

III. Give the formula and the name for the salt produced from the following acids and bases.

1. nitric acid and sodium hydroxide salt name: salt formula:

6. permanganic acid and rubidium hydroxide salt name: salt formula: