

Changes in Matter

Def: _____

There are 4 types of changes: chemical, physical, neutralization and combustion.

Review

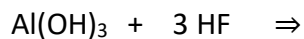
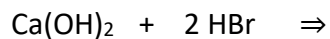
Chemical changes signs	Physical changes signs
<ul style="list-style-type: none">• _____• _____• _____• _____• _____	<ul style="list-style-type: none">• _____• _____• _____• _____• _____

Neutralization

Def: _____

Once neutralization has occurred, acids and bases are no longer present. Instead you have created two new substances.

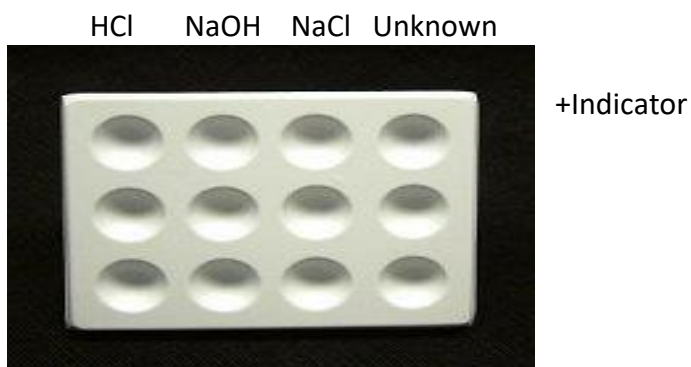
Examples



Molecules always produced are?

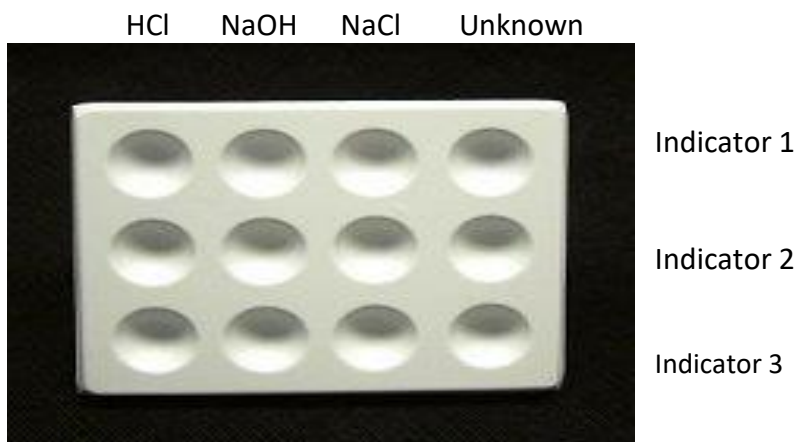
Neutralizations labs using indicators

A- How to determine whether an unknown is an acid, base or neutral solution?



B- How to neutralize unknown once its origin is determined?

C- What if you have many indicators to choose from?



Past Exam questions

1. In neutralizing sulfuric acid, H_2SO_4 , with caustic soda, NaOH , sodium sulfate, Na_2SO_4 , and water are produced. Which equation represents this chemical reaction?

- A) $\text{H}_2\text{SO}_4 + 2 \text{NaOH} \rightarrow \text{Na}_2\text{SO}_4 + 2 \text{H}_2\text{O}$
- B) $\text{Na}_2\text{SO}_4 + 2 \text{H}_2\text{O} \rightarrow \text{H}_2\text{SO}_4 + 2 \text{NaOH}$
- C) $\text{H}_2\text{SO}_4 + \text{NaOH} \rightarrow \text{Na}_2\text{SO}_4 + 2 \text{H}_2\text{O}$
- D) $\text{Na}_2\text{SO}_4 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{SO}_4 + 2 \text{NaOH}$