



Acids and Alkalis Worksheet



1. Indicators are chemicals that change colour in the presence of an acid or an alkali. Universal indicators and pH meters are used to measure pH.

a) Name another indicator that is used.

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b) Describe how you would use a universal indicator to find the pH of sodium hydroxide. What colour change would you observe?

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2. a) The pH scale is a measure of the acidity or alkalinity of a solution. Write the following colours in the correct places on the scale: green, red, purple.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
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b) Fill in the missing words in the sentences below.

i) All alkalis are These are substances that react with acids by absorbing hydrogen ions (H^+).

ii) Oxides, and carbonates of metals, such as sodium hydroxide, are bases. Some bases are soluble in water and these are called alkalis.

iii) All contain hydroxide ions (OH^-). The more OH^- ions a solution has, the more it will be.

c) Wh

alkaline	bases	hydroxides	chlorides	alkalis	acids	acidic
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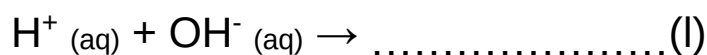
d) Give one example of an acidic compound that is a liquid.

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3. a) When an acid reacts with a base, a neutralization reaction occurs. Complete the general equation to show what happens.



b) In neutralization reactions, hydrogen ions react with hydroxide ions. Complete the following equation below to show what happens.



c) Write down the missing reactants or products in these acid-base reactions.

i) potassium hydroxide + sulfuric acid $\rightarrow$ + water

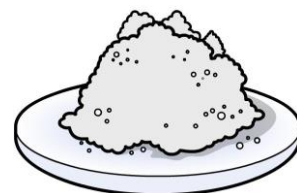
ii) copper oxide + acid $\rightarrow$ copper chloride + water

iii) calcium carbonate + sulfuric acid $\rightarrow$ + carbon dioxide + water

iv) $\text{ZnO} + \text{H}_2\text{SO}_4 \rightarrow$ + H_2O

v) $\text{NaCO}_2 + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + \text{H}_2\text{O} +$

vi) $2\text{HCl} (\text{aq}) + \text{CaCO}_3 (\text{aq}) \rightarrow$ + $\text{H}_2\text{O} (\text{l}) + \text{CO}_2 (\text{g})$



4. Ammonia dissolves in water to produce an alkaline solution.

a) What ions are produced when it dissolves?

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b) Describe an important use of ammonium salts for humans.

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