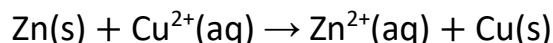


Name:

Class:



The ionic equation for the reaction between zinc and copper(II) sulfate is:



Explain why this is described as a redox reaction.

An explanation to include each of the following:

- As both oxidation and reduction take place.
- Zn loses two electrons to is oxidised to a Zn^{2+} ion.
- Cu^{2+} gains two electrons to become Cu and is reduced in the process.

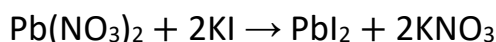
Name the two substances that must be present in air for iron to rust.

Oxygen and water

State the formulae of the following ions.

Carbonate	Sulfate
CO_3^{2-}	SO_4^{2-}

A student does an experiment to produce a precipitate of lead iodide, PbI_2 , using the following reaction.



He finds that 5.0 cm^3 of 0.90 mol/dm^3 KI solution reacts with 8.0 cm^3 of $\text{Pb}(\text{NO}_3)_2$ solution. Calculate the concentration, in mol/dm^3 , of the $\text{Pb}(\text{NO}_3)_2$ solution.

Moles of KI = conc $\times$ vol (dm^3)

Moles of KI = 0.90×0.005 (dm^3)

Moles of KI = $\frac{9}{2000}$

1 mole of $\text{Pb}(\text{NO}_3)_2$ reacts with 2 moles of KI.

Therefore moles of $\text{Pb}(\text{NO}_3)_2 = \frac{9}{4000}$

Conc = moles $\div$ vol (dm^3)

Conc = $\frac{9}{4000} \div 0.008$ (dm^3)

Conc = 0.28125 mol/dm^3

Describe a chemical test to show that a liquid contains water.

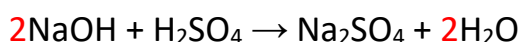
Test: add anhydrous copper(II) sulfate to the sample being tested.

Result: When water is present in a sample of anhydrous copper(II) sulfate it turns blue.

What is meant by the term atomic number?

The number of protons in the nucleus of an atom.

Balance the equation for the reaction between sodium hydroxide and sulfuric acid.



What colour flame would potassium ions produce in a flame test.

Purple or lilac

State the general formula for alkanes.

$\text{C}_n\text{H}_{2n+2}$