

Different metals have different levels of reactivity.

We can investigate this by heating different metals in the presence of oxygen.

To do this we will use:

A Bunsen burner.

A test tube containing potassium permanganate at the bottom.

When this is heated it produces oxygen.

Then mineral wool.

And samples of copper powder, iron powder, and magnesium ribbon.

The mineral wool keeps the potassium permanganate and the metal powder separate, but allows the oxygen to pass through.

We will also need a retort stand and clamp to hold the tube while heating.

Start with the least reactive metal copper.

We will heat the metal, then heat the potassium permanganate to produce oxygen.

You will see that there is a dull glow.

This is evidence of an oxidation reaction, and can be shown by the chemical equation: Copper + oxygen reacts to give copper oxide.

Do the same with iron, you'll see a brighter orange glow and sparks.

This reaction can be shown by the chemical equation: Iron + oxygen reacts to give iron oxide.

And then we repeat with magnesium.

The reaction creates a very bright white glow.

The chemical equation for this reaction is: Magnesium + oxygen reacts to give magnesium oxide.

We can produce a table of the results listing the metals used and what we observed.

These observations show the different reactivity of the metals, from the least reactive, copper, to the most reactive, magnesium.