

# Decomposing copper carbonate



The copper carbonate turns into a bright red while it is being heated. After the Bunsen burner has been turned off, the copper carbonate turns black, as it has formed CuO. Metal carbonates such as calcium carbonate break down when heated strongly. This is called thermal decomposition. Here are the equations for the thermal decomposition of calcium carbonate: calcium carbonate → calcium oxide + carbon dioxide  $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$  Other metal carbonates decompose in the same way.

What happens to the mass of CuO when the mass of  $\text{CuCO}_3$  is doubled? The mass of CuO increases.

If the mass of  $\text{CuCO}_3$  is doubled, the amount of CuO would be doubled as well and this is because the data shows us that the ratio of the equation uses your results to calculate the number of moles of copper carbonate you started with and the number of moles of copper oxide you ended up with for each experiment.  $\text{CuCO}_3 \rightarrow \text{CuO} + \text{CO}_2$  The reaction happens according to this equation. Use your results to calculate the number of moles of carbon dioxide produced in each experiment. Clearly show your working. During my experiment, I found that the mass of copper carbonate decreases when it is heated. This is because when copper carbonate is heated, it produces carbon dioxide and as a gas, it escapes from the crucible and into the surrounding air.