

## Rates of Reaction: Indigestion Remedies

### Introduction

A direct cause of indigestion is the presence of too much hydrochloric acid in the stomach. Sodium hydrogencarbonate is added to tablets sold as “indigestion remedies”. It reacts with dilute hydrochloric acid solution to give carbon dioxide, water and sodium chloride. This reduces the amount of hydrochloric acid in your stomach, easing indigestion.

It is important that indigestion tablets work quickly. The carbon dioxide made by the reaction escapes, causing a loss in mass as the reaction carries on. We can measure how quickly they work by recording the loss in mass as the tablets react.

### Your task

Your teacher will demonstrate the reaction of two different makes of indigestion tablet with dilute hydrochloric acid. Use the table below to record the loss in mass as the reactions carry on. Then complete the tables, draw the graph and answer the questions.

Indigestion tablet:

Time (s)	Mass (g)	Loss of mass (g)

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Time (s)	Mass (g)	Loss of mass (g)

Plot a graph, **on the same axes**, of loss of mass against time for each indigestion tablet.

1. In what ways are the two curves different? Try to think of reasons why they are different.
2. During which minute was the reaction the fastest for the first indigestion tablet?
3. What total mass of gas was produced in the first minute in **each** case?
4. What mass of gas was produced **between** minute 1 and minute 2 in **each** case?
5. Explain which of the two indigestion tablets would cure your indigestion more quickly.