

## RATES OF REACTION

Magnesium and dilute hydrochloric acid react to produce magnesium chloride and hydrogen. During the reaction the magnesium dissolves in the acid. The rate of reaction may be increased in a number of different ways.

a) What is meant by "rate of reaction" ?

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b) Describe a method you could use to follow the rate of the reaction.

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c) When the acid is more concentrated the reaction is faster. How would you be able to tell that the reaction was faster?

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d) Explain, using particle theory, why the reaction is faster when more concentrated acid is used.

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(3)

e) Another way to increase the reaction rate between magnesium and acid is to heat the acid. Explain why heating makes the reaction faster.

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f) Give one other way, other than using a catalyst, which would make the reaction between magnesium and hydrochloric acid go faster.

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g) The reaction between zinc and hydrochloric acid is similar to that of magnesium but is much slower as zinc is less reactive. Suggest, in terms of energy, why the reaction is slower.

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