

## Dissolution of aspirin tablets

### Teacher and technician sheet

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#### Health and safety note

Make sure that students wear eye protection.  $0.1 \text{ mol dm}^{-3}$  sodium hydroxide is an irritant.

#### Equipment and materials

Each student or pair of students will require:

##### For the dissolution

- $1 \text{ dm}^3$  beaker
- $1 \text{ cm}^3$  pipette (or plastic syringe)
- Paddle stirrer
- 300 mg aspirin tablet – Harmful
- Deionised water
- Stopwatch
- For extension work (optional):
  - aspirin capsule – Harmful
  - dispersible aspirin – Harmful
  - various buffer solutions to mimic pH found in different regions of the gastrointestinal tract

##### For the colorimetric analysis

- Calibration graph for the colorimetric determination of aspirin (see *Colorimetric analysis of aspirin*)
- Colorimeter, suitable filter and a  $6 \text{ cm}^3$  cuvette
- Boiling tubes (x6) and rack
- $0.1 \text{ mol dm}^{-3}$  sodium hydroxide solution – Irritant
- Dropper pipette
- $0.02 \text{ mol dm}^{-3}$  iron(III) chloride solution
- Water bath at  $70 \text{ }^\circ\text{C}$
- $10 \text{ cm}^3$  pipette (or a  $10 \text{ cm}^3$  measuring cylinder)

#### Preparation of solutions

To make up the iron(III) chloride solution you will need (in addition to deionised water):

- $1 \text{ dm}^3$  volumetric flask
- Concentrated hydrochloric acid – Corrosive
- Potassium chloride
- Iron(III) chloride-6-water – Harmful

**$0.02 \text{ mol dm}^{-3}$  iron(III) chloride solution** Weigh out 5.44 g iron(III) chloride-6-water and transfer quantitatively to a  $1 \text{ dm}^3$  volumetric flask. Add about  $100 \text{ cm}^3$  deionised water and swirl the flask to dissolve the solid. Now add  $3 \text{ cm}^3$  of concentrated hydrochloric acid and 10 g of potassium chloride. Again, swirl the contents of the flask to dissolve the potassium chloride before making up to the mark with deionised water.