Dissolution of aspirin tablets
Teacher and technician sheet

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

Equipment and materials
Each student or pair of students will require:
For the dissolution
- 1 \text{ dm}^3 \text{ beaker}
- 1 \text{ cm}^3 \text{ pipette (or plastic syringe)}
- Paddle stirrer
- 300 mg aspirin tablet – Harmful
- Deionised water
- Stopwatch
- For extension work (optional):
  o aspirin capsule – Harmful
  o dispersible aspirin – Harmful
  o 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 
  \textit{Colorimetric analysis of aspirin})
- Colorimeter, suitable filter and a 6 cm$^3$ cuvette
- Boiling tubes (x6) and rack
- 0.1 \text{ mol dm}^{-3} \text{ sodium hydroxide solution – Irritant}
- Dropper pipette
- 0.02 \text{ mol dm}^{-3} \text{ iron(III) chloride solution}
- Water bath at 70 °C
- 10 cm$^3$ pipette (or a 10 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 \text{ volumetric flask}
- Concentrated hydrochloric acid – Corrosive
- Potassium chloride
- Iron(III) chloride-6-water – Harmful

0.02 \text{ mol dm}^{-3} \text{ iron(III) chloride solution} Weigh out 5.44 g iron(III) chloride-6-water and transfer quantitatively to a 1 \text{ dm}^3 \text{ volumetric flask. Add about 100 cm$^3$ deionised water and swirl the flask to dissolve the solid. Now add 3 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.