# Sulfuric(VI) acid

| Substance | Hazard | Comment |
|---|---|---|
| **Concentrated sulfuric(VI) acid** |  CORROSIVE | DANGER. It causes severe skin burns and eye damage. It reacts violently, becoming very hot, when mixed with water. For a 15-minute exposure, the vapour concentration in the atmosphere should not exceed 0.15 mg $m^{-3}$. |
| **Moderately-concentrated sulfuric(VI) acid** *(If 1.5 M or more)* Includes acid used in car batteries. |  CORROSIVE | DANGER. It causes severe skin burns and eye damage. |
| **Moderately-dilute sulfuric(VI) acid** *(If less than 1.5 M but 0.5 M or more)* |  IRRITANT | WARNING. It may irritate the eye and skin. |
| **Dilute sulfuric(VI) acid** *(If less than 0.5 M)* | LOW HAZARD | It may still cause harm in the eyes or in a cut. For many activities in school science, 0.4 M is adequate. |

## Typical control measures to reduce risk

- Use the lowest concentration possible.
- Use the smallest volume possible.
- Wear eye protection for all but the most-dilute solutions; goggles for concentrated acids.
- Wear protective gloves if anything more than tiny amounts of concentrated acid is handled.
- **Add the concentrated acid slowly to cold water (or preferably ice) when diluting, never the reverse; stir frequently to ensure good mixing.**

## Assessing the risks

- ***What are the details of the activity to be undertaken? What are the hazards?***
- ***What is the chance of something going wrong?***
  *eg, hazardous products are formed in reactions with the acid or corrosive fumes are produced if concentrated acid is over-heated.*
- ***How serious would it be if something did go wrong?***
  *eg, skin and eyes can be seriously burned if not treated quickly.*
- ***How can the risk(s) be controlled for this activity?***
  *eg, can it be done safely? Does the procedure need to be altered? Should goggles or safety spectacles be worn?*

## Emergency action

- **In the eye** — Flood the eye with gently-running tap water for 10 minutes. Consult a medic.
- **Swallowed** — Do no more than wash out the mouth with drinking water. Do **not** induce vomiting. Consult a medic.
- **Spilt on the skin or clothing** — Remove contaminated clothing. Especially with concentrated acid, quickly use a *dry* cloth or paper towel to wipe as much liquid as possible off the skin. Then drench the skin with plenty of water. If a large area is affected or blistering occurs, consult a medic.
- **Spilt on the floor, bench, etc** — Wipe up small amounts with a damp cloth and rinse it well. For larger amounts, and especially for (moderately) concentrated acid, cover with mineral absorbent (eg, cat litter) and scoop into a bucket. Neutralise with sodium carbonate. Rinse with plenty of water.

 