### Student safety sheets

#### Hydrochloric acid gas

**Substance**
- Hydrogen chloride gas
- Concentrated hydrochloric acid (If 6.8 M or more)
- Moderately-concentrated hydrochloric acid (If less than 6.8 M but 2.7 M or more)
- Dilute hydrochloric acid (If less than 2.7 M)

**Hazard**
- Corrosive
- Toxic
- IRRITANT
- LOW HAZARD

**Comment**
- DANGER. It causes severe skin burns and eye damage. It is toxic if breathed in. For a 15-minute exposure, the concentration in the atmosphere should not exceed 8 mg m\(^{-3}\). Effects of exposure by inhalation may or may not be immediately apparent and can develop and/or increase over time. Inhalation by those with known breathing difficulties (eg asthma) may exacerbate such pre-existing conditions.
- DANGER. It causes burns. The vapour irritates the lungs.
- WARNING. It may irritate the eyes, and respiratory system.
- This includes stomach acid. Dilute acid may still cause harm in the eyes or in a cut.

**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.
- Avoid breathing the gas or fumes from concentrated solutions, eg by use of a fume cupboard.

**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?
- How serious would it be if something did go wrong?
- How can the risk(s) be controlled for this activity?

**Emergency action**
- In the eye
  - Flood the eye with gently-running tap water for 10 minutes. Consult a medic.
- Vapour breathed in
  - Remove to fresh air. Consult a medic if breathing difficult.
- 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. 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
  - For release of gas, consider the need to evacuate the laboratory and open all windows. For large spills, and especially for (moderately) concentrated acid, cover with mineral absorbent (eg, cat litter), then scoop into a bucket. Neutralise with sodium carbonate. Rinse with plenty of water. Wipe up small amounts with a damp cloth and rinse well.