Phosphoric(V) acid

also known as **orthophosphoric acid**

Substance	Hazard	Comment
Concentrated phosphoric(V) acid *(if 2.6 M or more)* *Usually sold as 85% w/w (about 14.7 M)*	**CORROSIVE**	DANGER: cause severe skin burns and eye damage. For a 15-minute exposure, the concentration of phosphoric acid vapour in the atmosphere should not exceed 2.0 mg m^{-3}. It reacts violently, becoming very hot, when mixed with water. It decomposes if heated strongly, forming toxic oxides of phosphorus. This includes phosphoric acid used in most descaling and rust treatments.
Moderately concentrated phosphoric(V) acid *(if less than 2.6 M but 1.0 M or more)*	**IRRITANT**	WARNING: irritating to eyes and skin.
Dilute phosphoric(V) acid *(if less than 1.0 M)*	**Currently not classified as hazardous**	Dilute acid may still cause harm to the eyes or the skin. Treat as for more concentrated samples. This includes acid used in cola drinks, etc. Over long periods of time, the acid may attack teeth.

Typical control measures to reduce risk

- Use the lowest concentration possible.
- Use the smallest volume possible.
- Wear eye protection - goggles for concentrated acids.
- **Add the concentrated acid slowly to cold water 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 the 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 all emergency situations, alert the responsible adult immediately. Be aware that actions may include the following:

- In the eye — Irrigate the eye with gently-running tap water for at least 20 minutes. Call 999/111.
- In the mouth/swallowed — Do no more than rinse and spit with drinking water. Do **not** induce vomiting. Call 999/111.
- Spilt on the skin or clothing — Remove contaminated clothing. Quickly use a dry cloth or paper towel to wipe as much liquid off the skin as possible. Irrigate the affected area with gently-running tap water for at least 20 minutes. If a large area is affected or symptoms occur, call 999/111.
- 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.

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