

Ethanoic (acetic) acid

also methanoic (formic) acid

Substance	Hazard	Comment
Ethanoic acid (acetic acid) <i>Pure liquid, 'glacial'</i> Also methanoic (formic) acid <i>usually supplied as 90% solution (about 20 M)</i>	  CORROSIVE FLAMMABLE	DANGER: both acids cause severe skin burns and eye damage. Ethanoic acid only: flammable vapour and liquid. For a 15-minute exposure, the concentration of methanoic acid vapour in the atmosphere should not exceed 28.8 mg m ⁻³ . Some descalers for kettles, irons etc use methanoic acid.
Concentrated acids Solution in water <i>(if 4 M or more ethanoic acid; 2.2 M or more methanoic acid)</i>	 CORROSIVE	DANGER: both acids cause severe skin burns and eye damage.
Moderately concentrated acids <i>(if less than 4 M but 1.7 M or more ethanoic acid; less than 2.2 M but 0.4 M or more methanoic acid)</i>	 IRRITANT	WARNING: both acids are irritating to the eyes and skin. Ant venom is about 1.5 M methanoic acid; stinging nettles are less concentrated.
Dilute acids <i>(if less than 1.7 M ethanoic acid; less than 0.4 M methanoic acid)</i>	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 vinegar (about 0.8 M ethanoic acid).

Typical control measures to reduce risk

- Use the lowest concentration possible.
- Use the smallest volume possible.
- Wear eye protection; goggles for concentrated acids.
- Avoid breathing 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?
eg choking fumes if concentrated acid is over-heated.
- How serious would it be if something did go wrong?
Note – we put vinegar on chips!
- 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.
- Vapour breathed in Remove to fresh air. Call 999/111 if breathing is difficult.
- In the mouth/swallowed Do no more than rinse and spit with drinking water. Do **not** induce vomiting. Call 999/111.
- Split 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.