

Nitric(V) acid

Substance	Hazard	Comment
Concentrated nitric acid (if 10 M or more)	 CORROSIVE  OXIDISING	DANGER: May cause or intensify a fire in contact with combustible materials. Causes severe skin burns; skin is stained yellow and then peels. Causes eye damage. Toxic if inhaled. Corrosive to the respiratory tract For a 15-minute exposure, the vapour concentration in the atmosphere should not exceed 2.6 mg m ⁻³ . Use a fume cupboard. Usually supplied in plastic bottles which will be attacked by the acid after a few years – transfer to borosilicate bottles with chemically-resistant cap.
Moderately concentrated nitric acid (if less than 10 M but 0.8 M or more)	 CORROSIVE	DANGER: It causes severe skin burns and eye damage.
Moderately dilute nitric acid (if less than 0.8 M but 0.1 M or more)	 IRRITANT	It is irritating to the eyes and skin.
Dilute nitric acid (if less than 0.1 M)	Currently not classified as hazardous	Dilute acid may still cause harm to the eyes or the skin. Treat as for more concentrated samples.

Typical control measures to reduce risk

- Use the lowest concentration possible.
- Use the smallest volume possible.
- Wear splash-proof goggles when making, dispensing and using solutions at or above 0.8 M. Wear eye protection when using solutions below 0.8 M, even when dilute solutions are used.
- Wear protective gloves if using concentrated solutions (at or above 3 M), especially if more than test tube amounts.
- Ensure good ventilation if oxides of nitrogen could be formed.

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 could hazardous products (such as oxides of nitrogen) be formed in reactions with the acid or corrosive fumes produced if concentrated acid is over-heated?
- How serious would it be if something did go wrong?
eg peeling skin, from burns caused by concentrated acid, may be very painful.
- 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.
- Fumes breathed in Remove the casualty to fresh air. Keep him/her warm. Call 999/111 even if no symptoms are apparent.
- 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.