

## Nitric(V) acid

Substance	Hazard	Comment
<b>Concentrated nitric acid</b> (if 10 M or more)	 <b>CORROSIVE</b>  <b>OXIDISING</b>	<b>DANGER:</b> 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 <sup>-3</sup> . 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.
<b>Moderately concentrated nitric acid</b> (if less than 10 M but 0.8 M or more)	 <b>CORROSIVE</b>	<b>DANGER:</b> It causes severe skin burns and eye damage.
<b>Moderately dilute nitric acid</b> (if less than 0.8 M but 0.1 M or more)	 <b>IRRITANT</b>	It is irritating to the eyes and skin.
<b>Dilute nitric acid</b> (if less than 0.1 M)	<b>Currently not classified as hazardous</b>	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.