## Nitric acid

<table>
<thead>
<tr>
<th>Substance</th>
<th>Hazard</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentrated nitric acid (If 10 M or more)</td>
<td>CORROSIVE OXIDISING</td>
<td><strong>DANGER:</strong> It causes severe skin burns and eye damage; skin is stained yellow and then peels. For a 15-minute exposure, the vapour concentration in the atmosphere should not exceed 2.6 mg m(^{-3}). Use a fume cupboard. May cause or intensify a fire in contact with combustible materials. Usually supplied in plastic bottles which will be attacked by the acid after a few years – transfer to borosilicate bottles with chemically-resistant cap.</td>
</tr>
<tr>
<td>Moderately-concentrated nitric acid (If less than 10 M but 0.8 M or more)</td>
<td>CORROSIVE</td>
<td><strong>DANGER:</strong> It causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>Moderately dilute nitric acid (If less than 0.8 M but 0.1 M or more)</td>
<td>IRRITANT</td>
<td>It is irritating to the eyes and skin.</td>
</tr>
<tr>
<td>Dilute nitric acid (If less than 0.1 M)</td>
<td>LOW HAZARD</td>
<td>It may still cause harm in the eyes, in a cut or on the skin.</td>
</tr>
</tbody>
</table>

### Typical control measures to reduce risk
- Use the lowest concentration possible.
- Use the smallest volume possible.
- Wear eye protection including when making or disposing of solutions.
- Wear protective gloves if concentrated acid is handled, 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 the eye**  
  - Flood the eye with gently-running tap water for 10 minutes. Consult a medic.
- **Fumes breathed in**  
  - Remove the casualty to fresh air. Keep him/her warm. Consult a medic even if no symptoms are apparent.
- **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**  
  - Quickly use a dry cloth or paper towel to wipe as much liquid off the skin as possible. Then drench with plenty of water. If a large area is affected or blistering occurs, consult a medic. Remove contaminated clothing and rinse it well.
- **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.