# SSERC logo

**SSERC Risk Assessment** (revised version March 2018)

(based on HSE’s INDG 163 ‘Risk assessment - A brief guide to controlling risks in the workplace’)

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| Activity assessed | Red, White and Blue |
| *Date of assessment* | 30th June 2020 |
| *Date of review (****Step 5****)* |  |
| *School* |  |
| *Department* |  |

| Step 1 | Step 2 | Step 3 | Step 4 | | | | |
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| *List Significant hazards here:* | *Who might be harmed and how?* | *What are you already doing?*  *What further action is needed?* | *Actions* | | | | |
| *by whom?* | | *Due date* | | *Done* |
| Copper sulphate is harmful by swallowing, is a skin/respiratory irritant and causes serious eye damage  0.5 mol l-1 Copper sulphate solution causes serious eye damage. | Technicians preparing solutions.  Demonstrator/audience by splashes. | Avoid raising dust.  Wear goggles (EN 166 3)  Wash off skin with copious amounts of water.  Wear goggles (EN 166 3) |  |  | |  | |
| Lead nitrate is toxic by inhalation or swallowing.  Lead nitrate solution is toxic if swallowed/ | Technicians preparing solutions.  Demonstrator/audience by splashes. | Avoid raising dust.  Wear goggles (EN166 3).  Wash off skin with copious amounts of water.  Avoid splashes. Wash off skin with copious amounts of water. |  |  | |  | |
| Ammonia is corrosive and the gas is toxic and corrosive  1 mol l-1 Ammonia solution is an irritant. | Technicians preparing solution.  Demonstrator/audience by splashes. | Prepare in a fume cupboard.  Wear goggles (EN166 3) and gloves.  Avoid splashes. Wear eye protection if appropriate. Wash off skin with copious amounts of water. |  |  | |  | |
| Nitric acid is corrosive and produces toxic fumes.  2 mol l-1 Nitric acid solution is corrosive. | Technicians preparing solution.  Demonstrator/audience by splashes. | Work in a fume cupboard or a well-ventilated area if the quantity is small. Wear goggles (EN166 3) and gloves.  Avoid splashes. Wear goggles (EN166 3). |  |  | |  | |
| Phenolphthalein is a mutagen, carcinogen and reproductive toxin.  Phenolphthalein solution is flammable. | Technicians preparing solution.  Demonstrator/audience | Avoid raising dust.  Wear goggles (EN166 3) and gloves.  Remove sources of ignition when using. |  |  | |  | |

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| **Description of activity:**  A solution of ammonia is poured into each of three beakers which contain (unknown to the audience) a little phenolphthalein, a little lead nitrate solution and a little copper sulphate solution respectively. The beakers’ contents turn red, milky white and deep blue respectively. Pouring the contents of the beaker into acid reverses the changes to give a colourless solution. |
| **Additional comments:**  Copper sulphate and lead nitrate are harmful to the environment.  Solutions should not be poured down the sink but kept for disposal by a licensed contractor. |