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**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 | Acid Rain in the Classroom |
| *Date of assessment* | 4th Nov 2018 |
| *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* |
| Sodium nitrate III is toxic (Cat 3) if swallowed, an eye irritant and an oxidiser | By spillage. Teacher/technician if tubes are prepared beforehand.  Pupil if they are preparing their own tubes | Wear eye protection (and possibly gloves)  Keep away from flammable materials. |  |  |  |
| Sodium hydrogen sulphate is corrosive to the eyes | By spillage. Teacher/technician if tubes are prepared beforehand.  Pupil if they are preparing their own tubes | Wear goggles (BS EN166 3)(and possibly gloves) |  |  |  |
| Sodium carbonate is irritant to the eyes | By spillage. Teacher/technician if tubes are prepared beforehand.  Pupil if they are preparing their own tubes | Wear eye protection. |  |  |  |
| Hydrochloric acid is corrosive to skin and eyes and a respiratory irritant | Technician preparing 1M solution | Wear faceshield and gloves.  Use fume cupboard if available; otherwise carry out in well ventilated laboratory |  |  |  |
| 1M hydrochloric acid is of no significant hazard |  |  |  |  |  |
| Universal indicator is prepared in ethanol and is hence flammable | Teacher/technician or Pupils | Keep away from sources of ignition |  |  |  |
| Nitrogen dioxide is highly toxic if inhaled. It is also corrosive and oxidising | Teacher/technician or Pupils by inhalation during experiment | Do not exceed the amount of reagents stated.  Keep cork on test tube when possible.  Work in a well ventilated area. |  |  |  |
| Sulphur dioxide is toxic if inhaled and is also corrosive | Teacher/technician or Pupils by inhalation during experiment | Do not exceed the amount of reagents stated.  Keep cork on test tube when possible.  Work in a well ventilated area. |  |  |  |
| Carbon dioxide is an asphyxiant in large quantities but only small amounts are being prepared here so it is of no significant hazard |  |  |  |  |  |

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| **Description of activity:**  Small quantities of three non-metal oxides are prepared in test tubes. CO2, NO2 and SO2)  Samples of the gas are removed using a Pasteur pipette and shaken with distilled water containing a few drops of universal indicator. |

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| **Additional comments:** |