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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 | Int1 PPA1-2 - Reactions of Metals with Acid |
| *Date of assessment* | 8th July 2022 |
| *Date of review (****Step 5****)* |  |
| *School* |  |
| *Department* |  |

| Step 1 | Step 2 | Step 3 | Step 4 | | |
| --- | --- | --- | --- | --- | --- |
| *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* |
| Magnesium ribbon is flammable | Pupils by burning | Keep away from sources of ignition |  |  |  |
| Hydrochloric acid is corrosive to skin and eyes gives off irritating and corrosive fumes. | Technician while preparing solutions | Wear goggles (BS EN166 3) or a face shield and gloves. Work in a fume cupboard. |  |  |  |
| 2 mol l-1 hydrochloric acid is of no significant hazard |  |  |  |  |  |
| The reaction produces an aerosol of hydrochloric acid which is irritating to eyes and lungs | Pupils by inhalation carrying out the experiment. | Work in a well-ventilated lab. Tell pupils not to sniff the test tubes. Loosely plug the tubes with cotton wool / mineral wool to trap the aerosol. |  |  |  |
| Hydrogen, produced in the reaction is highly flammable. | Pupils by burning | The amount of hydrogen produced is small. Even if it is ignited, there will only be a brief ‘pop’ Keep away from sources of ignition. |  |  |  |
| Zinc and copper are of no significant hazard. |  |  |  |  |  |

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| **Description of activity:**  Pieces of magnesium, zinc and copper are put into samples of hydrochloric acid and observed to see if bubbles are given off. |

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| **Additional comments:**  If other metals, or a different acid, are used, they should be risk assessed by the teacher. |