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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 | Int2 PPA1-3 - Electrolysis |
| *Date of assessment* | July 8th 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* |
| Copper chloride is harmful if swallowed or in contact with the skin and is a skin / eye irritant. | Technician preparing dilute solution | Wear eye protection and consider gloves. |  |  |  |
| 0.1 mol l-1 Copper II chloride solution is an eye irritant | Pupil by splashes during the experiment | Wear eye protection |  |  |  |
| Chlorine gas, which is toxic if inhaled, is given off in the reaction. | Pupil by inhalation carrying out the experiment. | Work in a well ventilated lab. Keep the current to less than 0.3 A to reduce emissions.Or consider an alternative method |  |  |  |

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| **Description of activity:**Copper chloride solution is electrolysed using carbon electrodes and the chloride gas given off tested by bleaching blue litmus paper. |

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| **Additional comments:****A safer version is to use a microscale approach. A method is in the Microscale Chemistry section of the SSERC website. The reaction is not only smaller scale but is carried out within a Petri dish which contains the chlorine thus all but eliminating the risk.** |