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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 | Preparing Copper Sulphate Crystals |
| *Date of assessment* | October 2024 |
| *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* |
| Sulphuric acid is highly corrosive and an oxidiser. It also produces a lot of heat on adding to water. | Technician (possibly teacher) preparing the 1.4 mol l-1 solution. | Wear goggles (BS EN166 3) or a face shield and gloves. |  |  |  |
| 1.4 molar sulphuric acid is a skin/eye irritant. | Teacher, technicians or learners by splashes in use. | Wear eye protection (BS EN166) and consider gloves. |  |  |  |
| Copper oxide is harmful if swallowed. | Learners by ingestion from unwashed hands. | Standard laboratory hygiene will address this issue. Wash hands after handling. |  |  |  |
| The copper sulphate solution is corrosive to eyes and harmful if ingested. | Learners by contact with eyes while using | Wear goggles (BS EN166 3). Do not boil the copper sulphate more than very gently. |  |  |  |
| If heated sulphuric acid can decompose to produce fumes of toxic SO2 and SO3. | Earners while heating their copper sulphate solution. | As long as all the acid is neutralised, which is recognisable by there being copper oxide remaining in the tube, all the acid has been neutralised and there is no hazard. |  |  |  |
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| **Description of activity:**  Excess copper oxide is added to 1.4 mol l-1 sulphuric acid in a hot water bath.  It is filtered to remove any remaining copper oxide, heated briefly to evaporate further water and then poured into a petri dish or evaporating basin to crystallise. |

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| **Additional comments:**  Disposal  The filter paper only contains a very small amount of copper oxide and so this can go into the bin.  The copper sulphate crystals can be kept for use in the school at a later date. |