# 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 | Reduction of copper oxide with Hydrogen |
| *Date of assessment* | 30th January 2021 |
| *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 II oxide is harmful by ingestion | Technician/pupil preparing mixture with carbon. | Avoid raising dust and observe normal lab hygiene. Gloves may be worn – which will keep hands clean as well. |  |  | |  | |
| Hydrogen is highly flammable and mixtures with air are explosive | Technician filling syringes Pupils/demonstrator by ignition during experiment | Fill syringes away from any sources of ignition. Ensure any air in the tubing is flushed out before filling the syringes. Extinguish the spirit burner before taking the cap off the hydrogen syringe and passing the gas over the hot copper oxide. |  |  | |  | |

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| **Description of activity:**  A small quantity of copper oxide is placed in a glass Pasteur pipette and heated over a spirit burner. The heat is then removed and a Luer lock syringe of hydrogen gas is passed over the hot copper oxide, reducing it to metallic copper The reaction can also be done with various other metal oxides such as lead and nickel. |
| **Additional comments:** |